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U.S. Department of the Interior  
Bureau of Land Management  
Rock Springs District Office

Green River Resource Area

1992

# Green River Resource Area Resource Management Plan and Draft Environmental Impact Statement Volume 1 of 3



The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their various values so that they are considered in a combination that will best serve the needs of the American people. Management is based upon the principles of multiple use and sustained yield, a combination of uses that take into account the long term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific and cultural values.

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# United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Wyoming State Office

P.O. Box 1828

Cheyenne, Wyoming 82003

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Dear Reader:

Enclosed for your review and comment is the Draft Resource Management Plan Environmental Impact Statement for the Green River Resource Area. The alternative management plans described in this document have been designed to resolve land management issues that were identified in the early stages of the planning process. The environmental consequences of implementing the alternatives also are analyzed in the document.

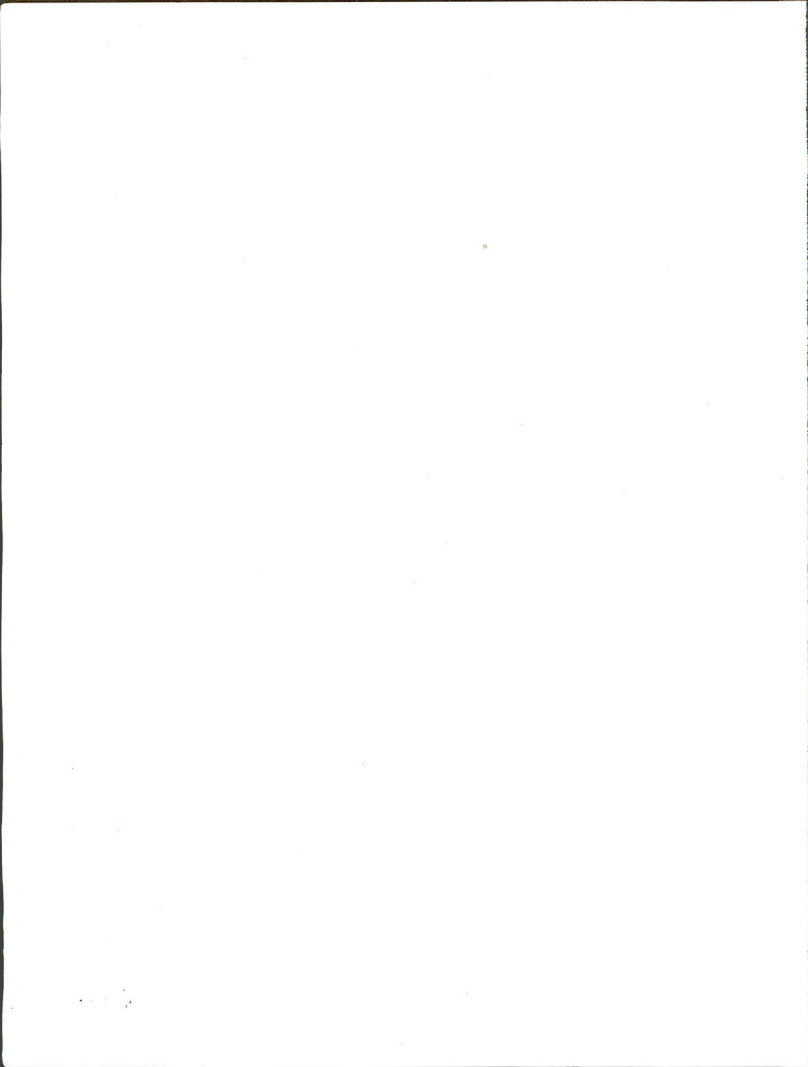
Your comments are invited on the alternatives presented and on the adequacy of the impact analyses. A 90-day comment period will begin with the date the Environmental Protection Agency (EPA) publishes the filing of this draft environmental impact statement in the Federal Register. Please send your written comments to Renée Dana, Team Leader, P.O. Box 1869, Rock Springs, Wyoming 82902.

Comments on the alternatives and on the adequacy of the impact analyses will be fully considered and evaluated in development of the proposed RMP final EIS. Through your participation in this effort, we can move forward together toward a common goal of improved public land management in the Green River Resource Area.

Sincerely,

Ray Brubaker  
State Director

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**Resource Management Plan  
Environmental Impact Statement  
for the  
Green River Resource Area  
Rock Springs, Wyoming**

**(X) Draft**

**( ) Final**

**Lead Agency:** U.S. Department of the Interior, Bureau of Land Management

**Type of Action:** Administrative

**Jurisdiction:** Sweetwater, and portions of Fremont, Uinta, Sublette, and Lincoln Counties

**Abstract**

This draft environmental impact statement (EIS) addresses alternative resource management plans for managing federal land and federal mineral estate in south central and southwestern Wyoming. The area covered comprises about 3,500,000 acres of land in which surface and minerals are federally owned and 81,000 additional acres in which only the minerals are federally owned ("split estate"). This public land is administered by the Bureau of Land Management, Green River Resource Area, Rock Springs District, Wyoming. The draft EIS focuses primarily on three resource management issues relating to resource uses that affect vegetation, soils, and watershed values; suitability of areas for special management area designations; and opportunities for improving public land and resource accessibility.

Four alternatives that address the issues have been considered: continuation of present management (Alternative A) and three other alternatives that provide a variety of management choices ranging from restricting management actions or development to actively mitigating the effects of resource management actions or development. The Preferred Alternative is a combination of Alternatives A, B, and C. The four alternative plans presented in Chapter 2 focus on allocating public lands and resources among the uses and prescribing general management actions that would be taken. The various impacts that would be expected from implementing each of the alternatives are documented in Chapter 4.

When the Green River RMP is completed, it will provide a comprehensive framework for managing the BLM-administered public lands and resources and allocating their uses in the resource area. Further information regarding this draft EIS can be obtained from the address below. Comments will be accepted for 90 days following the date that the Environmental Protection Agency publishes the notice of filing of this draft in the Federal Register.

Comments should be sent to the following address:

Renée Dana, Team Leader  
Bureau of Land Management  
Rock Springs District  
P.O. Box 1869  
Rock Springs, Wyoming 82902  
(307) 382-5350



**DRAFT  
RESOURCE MANAGEMENT PLAN  
ENVIRONMENTAL IMPACT STATEMENT**

**for the**


**Green River Resource Area  
Rock Springs, Wyoming**

Prepared by:

**United States Department of the Interior  
Bureau of Land Management  
Green River Resource Area  
Rock Springs District  
Rock Springs, Wyoming**

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**September 1992**

  
\_\_\_\_\_  
Wyoming State Director

9-17-92  
\_\_\_\_\_  
Date



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# ABBREVIATIONS

ACEC	Area of Critical Environmental Concern
ACHP	Advisory Council on Historic Preservation
AIRFA	American Indian Religious Freedom Act
AMP	Allotment Management Plan
APD	Application for Permit to Drill (an oil or gas well)
APHIS	Animal and Plant Health Inspection Service (USDA)
ARPA	Archeological Resource Protection Act
AUM	Animal unit month
BBLs	Barrels (a measure of the quantity of condensate)
BCF	Billion cubic feet (a measure of quantity of natural gas)
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
CRMP	Cultural Resource Management Plan
CSR	Channel stability rating
DBH	Diameter at Breast Height
EA	Environmental Assessment
EIS	Environmental Impact Statement
FLPMA	Federal Land Policy and Management Act (of 1976)
FMU	Forest management unit
FR	Federal Register
GRRA	Green River Resource Area
HMP	Habitat management plan
IBLA	Interior Board of Land Appeals
KGS	Known geologic structure
KSLA	Known sodium leasing area
MFP	Management Framework Plan (pre-FLPMA BLM land use plan)
MBF	Thousand board feet (a measure of timber volume)
MCF	Thousand cubic feet
MMBF	Million board feet (a measure of timber volume)
MMCF	Million cubic feet
MSL	Mean sea level
NEPA	National Environmental Policy Act (of 1969)
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NNL	National Natural Landmark
NPS	National Park Service
NRA	National Recreation Area
NRHP	National Register of Historic Places
NSO	No Surface Occupancy (a stipulation on an oil and gas lease)
NWPS	National Wilderness Preservation System
ORV	Off-road vehicle
PRLA	Preference Right Lease Application
RAMP	Recreation Area Management Plan
RCRA	Resource Conservation and Recovery Act (1976)

## ABBREVIATIONS

RMP	Resource Management Plan (BLM land use plan under FLPMA)
SHPO	State Historic Preservation Officer
SRMA	Special Recreation Management Area
TCLP	Toxicity Characteristic Leaching Procedure
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resource Management
WGFD	Wyoming Game and Fish Department
WHHA	Wild Horse Herd Area
WSA	Wilderness Study Area



# SUMMARY

## INTRODUCTION

This draft resource management plan environmental impact statement (RMP EIS) addresses future management options for approximately 3,635,000 acres of public land surface and 3,581,000 acres of federal mineral estate administered by the Bureau of Land Management (BLM) through its Green River Resource Area in Green River, Wyoming. The Green River Resource Area encompasses parts of Fremont, Lincoln, Sublette, Sweetwater, and Uinta counties in Southwest Wyoming.

When completed, the Green River RMP will provide a framework for managing the BLM-administered public lands and resources and allocating their uses in the resource area. Specifically, this RMP EIS is focused on resolving five key resource management issues: Minerals Resource Management and Rights-of-Way (how can mineral and land resources be managed to allow for appropriate types and levels of use or to provide protection, if needed?); Land Tenure Adjustment and Resource Accessibility (how should improved access and land manageability be provided?) vegetative, soils, air, and watershed resources (how should vegetation, soils, air, and watershed resources be managed and allocated to consumptive and nonconsumptive uses?); Recreation and Cultural Resources (how can public lands be managed for recreation uses and what management should be provided for cultural resources); special management area designation (what values or resources warrant management priority and emphasis under special management area designations?).

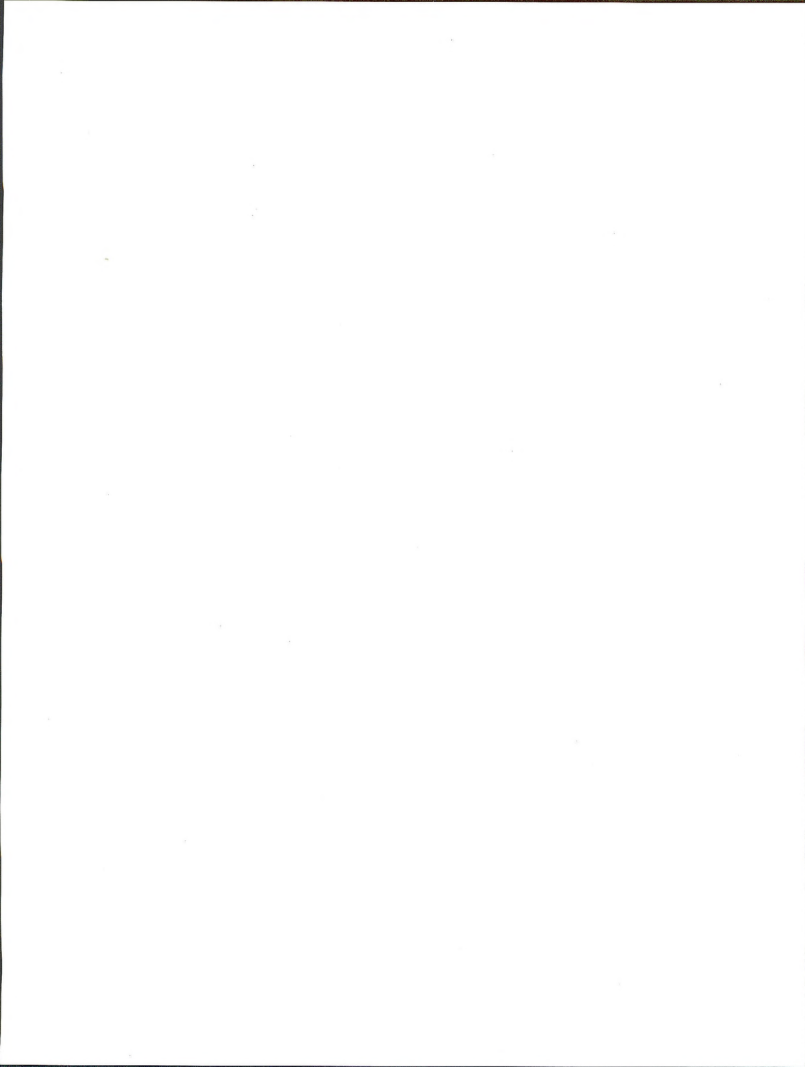
## ALTERNATIVES

Four planning alternatives are analyzed in detail in this document. All the alternatives are multiple-use oriented. Each alternative provides for resource production and environmental protection. The management prescriptions of the four alternatives are described in Chapter 2 and summarized and compared in Table 2-1 in Chapter 2.

Alternative A would continue current management practices on the basis of existing land use plans. Alternative B generally would reduce the level of land use restrictions and provide more intensive management of mineral resources, forest resources, recreation, and livestock grazing than either Alternative A or Alternative C. Alternative C would address resource management conflicts by increasing the level of restrictions on land uses and by providing a more intensive management of noncommodity resources than under Alternative A or B.

The agency's Preferred Alternative generally would place greater emphasis on protection of the natural environment than Alternative A or B and would prescribe fewer restrictions on land use than Alternative C. The management actions in the Preferred Alternative were drawn from Alternatives A, B, and C, but the Preferred Alternative also contains management actions for programs that are not included in any of the other alternatives.

The environmental consequences that could result from the management prescriptions of the four alternatives are described in Chapter 4 and summarized and compared in Table 2-2 in Chapter 2.



# CHAPTER 1

## PURPOSE OF AND NEED FOR THE PLANNING EFFORT

### INTRODUCTION

This draft environmental impact statement (EIS) evaluates alternative land use plans for the management of public lands and resources administered by the Bureau of Land Management (BLM) in the Green River Resource Area. Each alternative analyzed in detail represents a complete and reasonable resource management plan (RMP) which could be used to guide the management of the planning area. Each alternative also considers the land use plans of local and state governments and other federal agencies in and around the Green River Resource Area to assure that the approved RMP will be compatible with them.

The process for the development, approval, maintenance, and amendment or revision of RMPs was initiated under the authority of Section 202(f) of the Federal Land Policy and Management Act of 1976 (FLPMA) and section 202(c) of the National Environmental Policy Act of 1969 (NEPA). The process is guided by BLM planning regulations in Title 43 of the Code of Federal Regulations, part 1600 (43 CFR 1600) and the Council on Environmental Quality (CEQ) regulations in 40 CFR 1500.

The first tier of the three-tiered BLM planning process consists of (1) compiling and reviewing the current laws, regulations, policies, Executive Orders and directives pertaining to the planning area; and (2) development of any needed State Director's guidance, specific to the planning effort and the planning area.

Development of the RMP represents the second of the three-tiered BLM planning process, the land use planning tier. As such, the approved RMP will prescribe the future resource and land use management for the BLM administered public lands in the planning area. It is this process of planning for the management of the public land and resources, and allocating their uses, that guides activity planning and daily operations. Activity planning, the third tier of the BLM planning process, incorporates the resource and land use decisions of the RMP into the specific management guidance for administering the public lands in the planning area. During activity planning, the management prescriptions in the RMP are applied (1) to specific geographic areas in developing and implementing site-specific activity plans (e.g., allotment management plans, habitat management plans, interdisciplinary or coordinated activity plans); (2) in issuing various land and resource use authoriza-

tions; (3) in identifying mitigation needs; and (4) in developing and implementing other similar plans and actions.

After completion, the Green River RMP will be kept current through minor maintenance, or through amendments and revisions, as demands on public lands and resources change, as the land and resource conditions change, or as new information is acquired.

### PURPOSE AND NEED

The purpose for developing the Green River RMP is to provide an updated comprehensive and environmentally adequate framework for managing and allocating uses of public lands and resources in the Green River Resource Area. This effort is directed at identifying needed changes in the 1981 Management Framework Plans (MFPs) now covering the area because of policy and management changes that have occurred since that time.

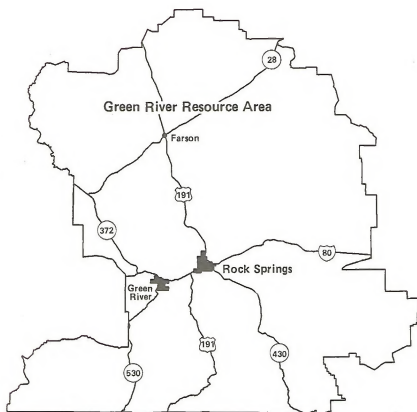
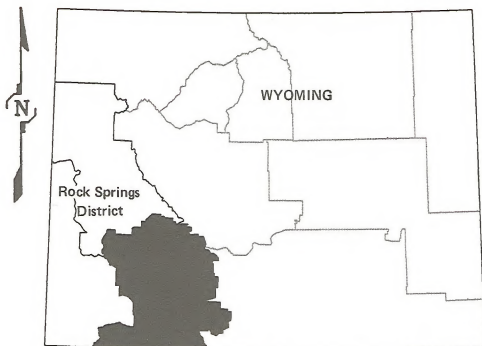
This RMP EIS documents the consideration and analyses of the consequences of current and alternative management of the planning area and provides the basis for developing an RMP that resolves the resource and land use issues involved with current management and that provides direction for site-specific activity planning and implementation of management actions in the future. The approved Green River RMP will supersede all existing management framework plans and other general planning decision documents for the planning area.

Until the Green River RMP is completed, daily management decisions will continue to be based upon the existing Big Sandy and Salt Wells MFPs covering the planning area.

### DESCRIPTION OF THE PLANNING AREA

The general planning area for the Green River RMPs the BLM Green River Resource Area, which includes portions of Sweetwater, Lincoln, Sublette, Fremont, and Uinta counties in southwestern Wyoming (Map1).

As provided by the Federal Land Policy and Management Act (FLPMA), the BLM has the responsibility to plan for and manage the "public lands." As defined by



Map 1  
**General Location**  
Green River Planning Area

## PURPOSE AND NEED

the Act, the "public lands" are those Federally owned lands, and any interest in lands (e.g., Federally owned mineral estate), that are administered by the Secretary of the Interior, specifically through the Bureau of Land Management. Within the Green River RMP planning area, there are varied and intermingled land surface ownerships and overlapping mineral ownerships. Therefore, the administrative jurisdictions for land use planning and for managing the land surface and minerals are also varied, intermingled, and overlapping (Maps A and B).

Because of this situation, the completed Green River RMP will not include planning and management deci-

sions for lands or minerals within the planning area that are privately owned or owned by the State of Wyoming or local governments. Providing direction for the surface or minerals management of these lands is not within BLM's jurisdiction. In addition, the completed RMP will not include planning and management decisions for those Federally owned minerals within the planning area, that are overlapped by Federally owned land surface that is administered by other Federal agencies. Table 1 summarizes the land surface and mineral ownership and administrative relationships for the area (Map 2).

**TABLE 1-1**  
**LAND AND MINERAL OWNERSHIPS AND ADMINISTRATIVE JURISDICTIONS WITHIN THE GREEN RIVER RMP PLANNING AREA**

<b>Areas the Green River RMP Decisions WILL Cover</b>	<b>Approximate Acres<sup>1</sup></b>
A. Areas where the land surface and mineral estate are both Federally owned and are both administered by the BLM <sup>2</sup>	3,500,000
B. Areas where the land surface is Federally owned and administered by the BLM and the mineral estate is owned and administered by private individuals, the state of Wyoming, or local governments <sup>3</sup>	135,000
C. Areas where the land surface is owned and administered by private individuals, the state of Wyoming, or local governments and the mineral estate is Federally owned and administered by the BLM <sup>4</sup>	81,000
<b>Total BLM administered federal land surface to be covered by RMP decisions</b>	<b>3,635,000</b>
<b>Total BLM administered federal mineral estate to be covered by RMP decisions</b>	<b>3,581,000</b>
<b>Areas the Green River RMP Decisions Will NOT Cover</b>	
D. Areas where the Federal land surface is administered by the Forest Service and the Federal mineral estate administered by the BLM <sup>5</sup>	83,000
E. Areas where the Federal land surface is administered by the Bureau of Reclamation and the Federal mineral estate is administered by the BLM <sup>6</sup>	177,000

## PURPOSE AND NEED

TABLE 1-1 (Continued)

### LAND AND MINERAL OWNERSHIPS AND ADMINISTRATIVE JURISDICTIONS WITHIN THE GREEN RIVER RMP PLANNING AREA

Areas the Green River RMP Decisions Will NOT Cover	Aproximate Acres <sup>1</sup>
F. Areas where the Federal land surface is administered by the U.S. Fish and Wildlife Service and the Federal mineral estate is administered by the BLM <sup>5</sup>	7,800
<b>Total BLM administered federal mineral estate that will NOT be covered by RMP decisions</b>	<b>267,800</b>
G. Areas where the land surface and minerals are both owned by private individuals, the state of Wyoming, or local governments and the BLM has no administrative authority <sup>6</sup>	1,371,000
<b>TOTAL LAND SURFACE ACRES IN THE GREEN RIVER RMP PLANNING AREA (ALL OWNERSHIPS)<sup>7</sup></b>	<b>5,359,000</b>

<sup>1</sup> Because of land surface and mineral ownership overlaps and administrative responsibility overlaps, acreage figures are not additive.

For the purpose of the Green River RMP planning effort, areas where one or more of the mineral resource categories are Federally owned, are defined and addressed as if all minerals in the area were Federally owned. Where mixed minerals ownership occurs (for example, privately owned oil and gas, overlapping with Federally owned coal in the same area), minerals planning and management decisions in the RMP will only pertain to the Federally owned minerals.

<sup>2</sup> In areas where the Federal land surface and Federal mineral estate are both administered by the BLM, the RMP will include planning and management decisions for both the land surface and the mineral estate.

<sup>3</sup> In areas where the Federal land surface is administered by the BLM, and the minerals are privately owned or owned by the State of Wyoming or local governments, the RMP will include planning and management decisions for only the BLM-administered Federal land surface. While these surface management decisions may have some affect on the ability to manage and develop the non-Federally owned minerals, the RMP planning and management decisions will not pertain to the non-Federal mineral estate. At the same time, surface and minerals management actions and development activities anticipated in these areas will be taken into account for purposes of cumulative impact analysis in the Green River RMP EIS.

<sup>4</sup> In areas where the land surface is privately owned or owned by the State of Wyoming or local governments, and the minerals are Federally owned, the RMP will include planning and management decisions for only the BLM-administered Federal mineral estate. While the land and resource uses and values on the non-Federal surface will be taken into account and will affect development of the Federal mineral planning and management decisions, these decisions will not pertain to the state and privately owned land surface. At the same time, surface and minerals management actions and development activities anticipated in these areas will be taken into account for purposes of cumulative impact analysis in the Green River RMP EIS.

<sup>5</sup> In areas where the Federal land surface is administered by the Forest Service, the Bureau of Reclamation or the Fish and Wildlife Service, and the Federal mineral estate is administered by the BLM, the land surface planning and management decisions are the responsibility of these "other" Federal surface management agencies. Any BLM administrative responsibilities within these areas

## PURPOSE AND NEED

TABLE 1-1 (Continued)

### LAND AND MINERAL OWNERSHIPS AND ADMINISTRATIVE JURISDICTIONS WITHIN THE GREEN RIVER RMP PLANNING AREA

(for example, actions concerning the Federal mineral estate) are handled case by case and are guided by the other surface management agencies' policies, procedures, and plans. Thus, the Green River RMP will not include planning and management decisions for the Federal minerals in these areas. At the same time, surface and minerals management actions and development activities anticipated in these areas will be taken into account for purposes of cumulative impact analysis in the Green River RMP EIS.

It is also important to note that, while other BLM responsibilities include surface management of certain Federal lands withdrawn for purposes of the Bureau of Reclamation (BOR), they are carried out in accordance with an interagency agreement between the two agencies. Administrative jurisdiction (including land use planning) for these lands lies with the BOR.

\* The Green River RMP will not include any planning and management decisions for areas where the land surface and minerals are both privately owned or owned by the State of Wyoming or local governments.

## PLANNING ISSUES AND PLANNING CRITERIA

### Planning Issues Identified

Issue identification is the first step of the nine step BLM planning process. The planning process is illustrated in Figure 1 and described in detail in Appendix 1-1.

Planning issues are determined from public demands, concerns, conflicts, or problems regarding the use or management of the public lands and resources. These are usually expressed in terms of the affects that some land and resource uses have on other land and resource uses or resource values. The following planning issues have been identified through public scoping and information gathered in analyzing the existing management situation in the Green River RMP planning area. They are based on the input of BLM personnel, the public, and interagency consultation.

#### Issue 1: Minerals Resource Management and Rights-of-Way

Special attention is needed to address mineral development and transportation network conflicts with other land and resource uses and values. Principal considerations include elk, moose, deer, and fisheries habitat, recreation values, forage uses, air quality, and sensitive watersheds. Areas where surface-disturbing activities (e.g., mineral exploration and development activities, right-of-way construction activities, etc.) are suitable, not suitable, or should be restricted, need to be identified.

#### Issue 2: Land Tenure Adjustment and Resource Accessibility

There are some areas in the resource area that are isolated and difficult to access (i.e., legal and physical access) and manage. Land disposals, acquisitions, and access acquisitions could provide improved access and manageability of public lands.

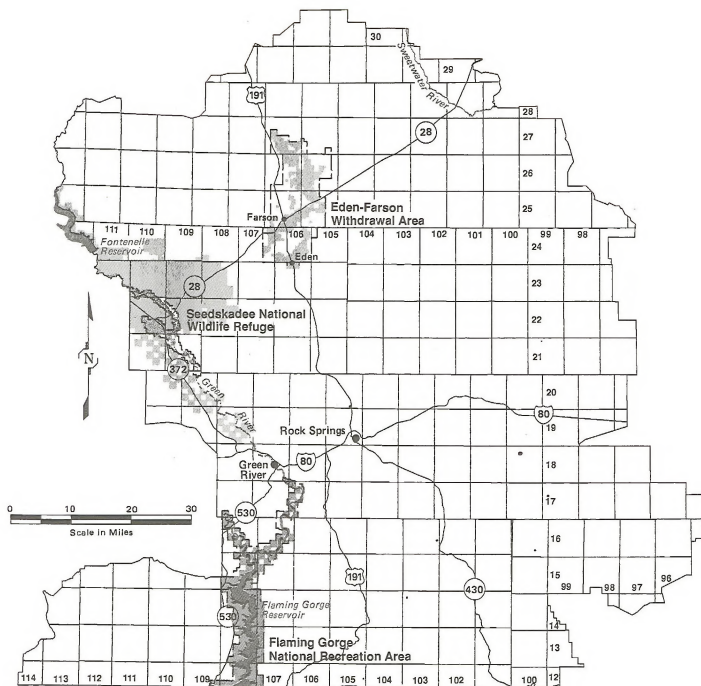
#### Issue 3: Resource Uses Affecting Vegetation, Soils, Air, and Watershed Values

There are conflicting demands for consumptive and nonconsumptive uses of the vegetation resources in the resource area. The basic problem is providing for resource values and nonconsumptive uses while allowing consumptive uses. Resource values include maintenance of general vegetative cover; watershed protection; maintenance and enhancement of riparian areas; soil stabilization; maintenance and enhancement of wildlife habitat (particularly big game crucial winter range and habitat for candidate or threatened and endangered species); and air quality protection. Consumptive uses include livestock grazing; timber harvest; off-road vehicle use; and vegetation removal by mineral development, rights-of-way construction, and other surface disturbing activities.

#### Issue 4: Recreation and Cultural Resource Management

There are certain resources and areas that need protection while others need to be considered for more public and recreational uses. Off-road vehicle use can





- Bureau of Reclamation Administered Land
- U S Fish and Wildlife Service Administered Land
- National Forest Service Administered Land

**Map 2**  
**Other Agency**  
**Administered Land**  
**Green River Planning Area**



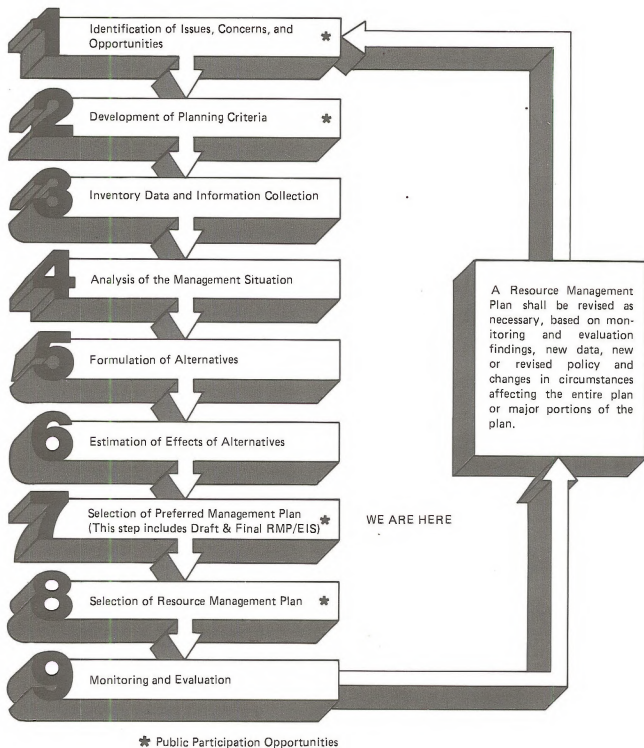


Figure 1  
Planning Process

## PURPOSE AND NEED

conflict with other land and resource uses and can cause damage to resources, including wildlife and watershed values and other recreation values. Principal considerations include providing for suitable and sufficient recreation uses and facilities (both dispersed and commercial), visual resource management direction, off-road vehicle use designations, and management of cultural and historical resources.

### Issue 5: Special Management Areas

There are unique and important areas, values, or resources in the resource area that meet the criteria for protection and management under special management designations. There are also seven areas already designated as areas of critical environmental concern (ACEC) that contain unique resources requiring special management attention.

## Planning Criteria

Planning criteria are the conditions and guidelines or parameters for conducting the planning effort, for preparing the RMP EIS and for developing the approved RMP. The planning criteria serve the following purposes:

1. To ensure that the planning effort is focused on the issues, follows and incorporates legal requirements, addresses management of all public land resources and land uses in the planning area, and that plan preparation is accomplished efficiently;
2. To identify the scope and parameters of the planning effort for the decision maker, the interdisciplinary planning team, and the public; and
3. To inform the public of what should and should not be expected from the completed RMP, including identification of any planning issues that are not ready for decision-making in the RMP and that will be addressed only through subsequent planning efforts. Planning criteria are based on standards prescribed by laws and regulations, guidance provided by the BLM Wyoming State Director, the results of consultation and coordination with the public and with other agencies and governmental entities, and Indian Tribes, analysis of information pertinent to the planning area, public input, and professional judgment. The general planning criteria described in Appendix 1-2 have been developed to help focus the preparation of planning and management alternatives and the analysis of their impacts, and to guide selection of the preferred alternative for the RMP EIS. Additional planning criteria may be identified as the planning process proceeds.

## Criteria for Use of Standard Mitigation Guidelines

The Wyoming BLM has developed "standard mitigation guidelines" for use in determining the types and levels of mitigation needed to protect important resources from actions involving surface disturbance and other human-presence disturbance or disruptive activities. These guidelines will be used in the RMP EIS process for (1) developing the alternatives for the RMP EIS and analyzing the impacts of the alternatives; and (2) as part of the planning criteria for developing the alternatives and for determining mitigation requirements to be included in the approved RMP. The "Wyoming BLM Standard Mitigation Guidelines for Surface-Disturbing Activities" are detailed in Appendix 2, which also contains further information on how they are used in the RMP EIS process.

Mitigation requirements (including restrictions on surface occupancy or surface activity and use) are applied as conditions of land and resource use for the following reasons: (a) to protect important cultural resources, recreational values, and wildlife resources (including threatened or endangered candidate species); (b) to minimize soil movement on slopes; (c) to minimize disturbance of vegetation in sensitive areas such as wetland or riparian areas; or (d) to protect visual resources and historic trails.

As appropriate, surface-disturbing activities would be subject to one or more of the mitigation requirements exemplified in the standard mitigation guidelines. The general types of mitigative measures to be used in the planning area and the acreage that would be affected are described in the discussion of each alternative. On lands where the federal surface is administered by other agencies and the federal mineral estate is administered by the BLM, the Wyoming BLM Standard Mitigation Guidelines would only be applied where the surface managing agency has not developed other surface protection mitigative measures or stipulations that are needed. The standard mitigation guidelines would be applied to land surface areas that are privately owned or owned by the State of Wyoming or local governments only in cases where those lands overlay BLM-administered federal minerals and only in situations where the mineral actions authorized by the BLM could (a) cause adverse on-site or off-site effects on threatened or endangered or candidate species or on cultural resource values; or (b) cause adverse off-site effects on any resource values on any other lands.

Mitigation requirements ultimately included in the approved RMP, that are developed through the use of the standard mitigation guidelines, could later be waived,

## PURPOSE AND NEED

modified, excepted or combined with other conditions of resource use (a) as a result of addressing situations beyond the analysis level of this RMP EIS (e.g., development and analysis of an activity plan or a site-specific project proposal), (b) if the conditions that originally warranted a restriction (such as the presence of an active raptor nest) no longer existed, or (c) if the location of a proposed activity or use were to be moved to avoid such conditions. Conversely, mitigation requirements that are not identified in the approved RMP could be applied to address situations or resource values either not present or not identified at the time the RMP was developed, but that are later identified through site-specific investigations (for example, a newly discovered raptor nest or newly identified cultural resources). Addition or modification of mitigation requirements generally would be allowable as long as modified conditions of use did not prohibit the exercise of valid existing rights.

### Criteria for the Coal Screening Planning Process

The latest coal screening and planning for management of the federal coal resources in the planning area were conducted in 1981 (Appendix 3-1). These coal screening data and planning decisions have become outdated and will only be used for describing existing coal management in Alternative A (i.e., continuation of existing management direction, or the "no action" alternative) of this RMP EIS.

A complete, new application of the coal screening process, including application of the Coal Unsuitability Criteria (43 CFR 3461) will be completed in the course of the planning effort, as described in the other alternatives of the RMP EIS and in Appendix 3-2). When completed, the coal planning decisions in the approved Green River RMP, identifying those federal coal areas that are acceptable for further consideration for leasing, will supersede the existing coal decisions for the planning area.

During the planning effort, other federal agencies, state and local governments, Indian tribes and other publics will be consulted as specified in 43 CFR 3420.1-6, 1-7.

### Criteria for Special Situations

#### Hydrocarbon Potential

As an aid in developing alternatives for the RMP EIS, special criteria were developed relative to the leasing and development of carbon-based minerals (oil, gas, coal, and coal bed methane). By inference from avail-

able geologic information, reports of past production, and information from the minerals industry, the Green River Resource Area was determined to have a high potential for the occurrence of fluid hydrocarbons, and to have areas of high and moderate potential for the occurrence for coal.

This information along with analysis of past mineral activity and production, was then utilized to develop Reasonable Forseeable Development (RFD) scenarios for fluid mineral development and coal development. These scenarios are used as assumptions to aid in analysis of impacts.

Because they are so broad, these resource occurrence and development potential classifications, developed for planning purposes, are not appropriate for or intended to predict future activity or the locations of new discoveries.

#### Locatable Minerals Potential

Special criteria were developed relative to the potential for the occurrence of locatable minerals such as zeolite, gold, jadeite, etc. Areas of potential were derived to facilitate analysis of the effects that the variety of other land and resource uses and management actions would have on locatable minerals development. This evaluation is only based on a representative analysis by inference and does not imply that there may or may not be other, undiscovered locatable minerals, of economic value in the Green River RMP planning area.

Areas identified as having potential for the occurrence of locatable minerals, include areas with current or past mining activity, areas where mining claims are located, areas where mineral occurrence has been proven from some type of activity (such as stratigraphic test holes), and areas where geologic formations are known to include locatable mineral occurrences (like zeolite, gold, jadeite, etc.).

#### Withdrawals and Classifications

Under section 204(l) of FLPMA, it is required to periodically review withdrawn and classified lands to determine whether existing withdrawals and classifications are serving or needed for their intended purposes. These reviews and resulting determinations are not a part of the BLM planning process. That is, a determination that an existing withdrawal or classification is no longer needed and should be terminated is not a planning decision; it's merely a disclosure of fact, based on the review. However, deciding how the involved lands are to be managed, if or after the withdrawal were to be terminated, may be a function of the planning process

## PURPOSE AND NEED

and may require a BLM planning decision in the RMP. As explained below, this depends upon whether or not the lands within the existing withdrawal or classification are under BLM jurisdiction, or under jurisdiction of another agency or governmental entity, and whether or not the BLM will have jurisdiction over part or all of the involved lands, if the withdrawal or classification is terminated.

### 1. Withdrawals and Classifications Under Other Agency Jurisdiction

The withdrawal review requirement of the FLPMA has not yet been completed on those federal lands withdrawn for the Seedskaadee National Wildlife Refuge or for the Eden/Farson and Seedskaadee Irrigation Projects. These withdrawn lands are, respectively, under the jurisdiction of the Fish and Wildlife Service (FWS), and the Bureau of Reclamation (BOR). For the purposes of the Green River RMP EIS, it must be assumed that this will continue to be the case, and that the planning and management authorities for these lands will remain with those agencies.

Therefore, the Green River RMP will not include any planning or management decisions for either the Federal land surface or Federal minerals within the administrative boundaries of these withdrawn areas. These lands will only be considered in conducting the environmental analysis for the Green River RMP EIS, in terms of cumulative impacts and in terms of how they may be affected by management in the planning area or vice versa. When the withdrawal review is completed on, if it is determined that any part of the withdrawals are to be terminated and that the BLM is to acquire jurisdiction over any of the affected lands, the BLM will, then, conduct land use planning on the involved lands and appropriately incorporate the planning and management decisions for them into the Green River RMP.

### 2. Withdrawals and Classifications Under BLM Jurisdiction

Where the review of withdrawals and classifications on any lands under BLM jurisdiction results in determining that any part of the withdrawals or classifications are no longer serving their intended purposes and are to be terminated, the planning and management decisions for the affected areas will also be reviewed to determine if and how the management of the involved lands should change. This latter review is done as an integral part of the

RMP EIS process, to establish any needed changes in the management of the involved lands, before the existing withdrawals or classifications are terminated, and includes consideration of whether or not new withdrawals or classifications, for other purposes, should be placed on any of the lands in question.

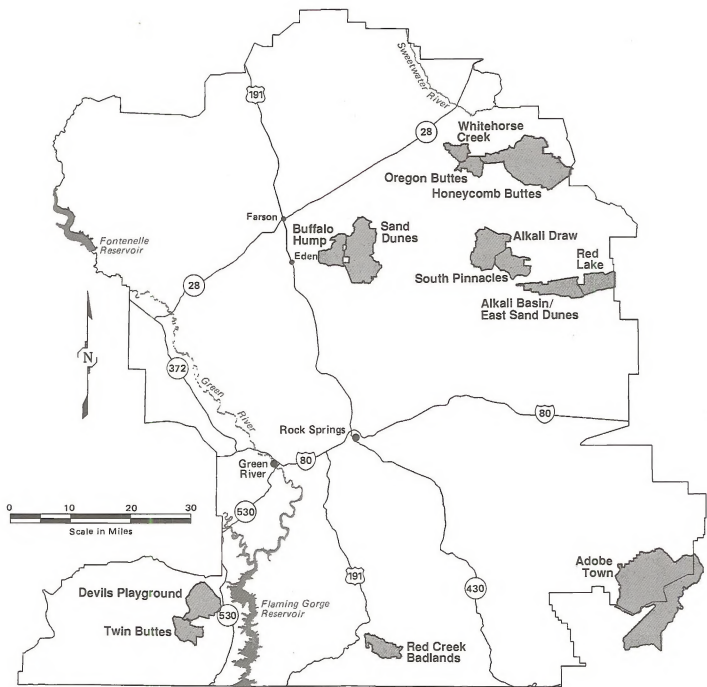
For purposes of providing an adequate comparison of impact analyses in this RMP EIS, under Alternative A (no action), all existing withdrawals and classifications, and their segregative effects, are assumed to continue in effect. The other alternatives will address various changes in management for the areas where termination of withdrawals or classifications under BLM jurisdiction are being considered.

### Wilderness

Wilderness management will not be addressed in the Green River RMP EIS. Management of wilderness study areas (WSAs) within the planning area is addressed in two other documents, the Rock Springs District Final Wilderness EIS (August 1990) and the Adobe Town-Ferris Mountains Final Wilderness EIS (December 1987). Within the planning area, there are approximately 225,000 acres in WSAs, of which approximately 98,600 acres have been recommended for designation as wilderness and are pending Congressional decision (see Map 3). When Congress makes decisions regarding the WSAs in the planning area, they will be incorporated into the Green River RMP. Until Congress acts, these WSAs will be managed under the "Interim Management Policy and Guidelines for Lands Under Wilderness Review" (USDI 1987). No other potential wilderness areas in the planning area have been identified for wilderness review.

Should Congress designate any of the WSAs (partially or wholly) as wilderness, the management of the designated areas will be in conformance with the Wilderness Act of 1964 and as described in the above-mentioned Wilderness EISs or in the designation legislation. Wilderness activity plans will be prepared for any wilderness areas designated by Congress.

Should Congress not designate part or all of any of the WSA areas as wilderness, the management of the nondesignated areas will be in accordance with the approved Green River RMP. The nondesignated areas will lose their identity as WSAs and will be managed along with the adjoining land area as prescribed in the approved Green River RMP.



 Wilderness Study Area

**Map 3**  
**Wilderness Study Areas**  
 Green River Planning Area



## PURPOSE AND NEED

Except for Map 3, the WSAs in the planning area also lose their identity in this RMP EIS. This was done to avoid confusion with the various management proposals in the alternatives that include either portions or all of some of the WSAs within larger areas that are proposed for some special management emphasis or designation (e.g., ACEC, Historic Landscape, SRMA, etc.). It must be understood that neither this RMP EIS nor the approved Green River RMP will address management prescriptions specifically for the WSAs. However, where management proposals for any portions of the WSAs that may be included in the larger, special management emphasis areas mentioned are to be more stringent than either the interim management policy or wilderness management can provide, the more stringent prescriptions are included. Where this occurs, it is to be assumed that the more stringent management prescriptions would apply, whether or not the areas involved were designated as wilderness.

### Wild Horses

The Green River RMP EIS will consider appropriate management levels for wild horses in accordance with an existing court order and related agreements.

In March 1981, in response to litigation brought by Mountain States Legal Foundation, the District Court ordered BLM to "remove all wild horses from the checkerboard grazing lands in the Rock Springs District except that number which the Rock Springs Grazing Association voluntarily agrees to leave in said area."

The currently used appropriate management levels (AML) for wild horses were based on the numbers agreed to and on existing land use plans. The AML for wild horses in the solid block public land areas was not changed from the numbers agreed to by the Rock Springs Grazing Association, because any additional numbers allowed on solid block public land would, at some point, be found on checkerboard lands covered by the District Court Order.

The management of wild horse populations must be in compliance with the District Court Order. Therefore, it is assumed that wild horse numbers in compliance with the District Court Order are those numbers agreed to by the Rock Springs Grazing Association, and that any wild horses above that number are "excess", in the meaning of the Act, and are subject to gathering.

### Wild and Scenic Rivers

The Green River RMP EIS will identify and address river segments that meet the National Wild and Scenic River System Act criteria for eligibility and suitability for inclusion in the system. In addition, for each suitable segment, the appropriate classification (Wild, Scenic, or Recreational) will be identified and an interim management prescription will be included in the approved Green River RMP. Appendix 4-1 describes the specific criteria utilized to determine eligibility and suitability of stream segments for inclusion in the National Wild and Scenic River System.

## CHAPTER 2

# DESCRIPTIONS OF THE ALTERNATIVES, INCLUDING THE PREFERRED RESOURCE MANAGEMENT PLAN

## ALTERNATIVE FORMULATION

The basic goal in formulating alternatives for a resource management plan environmental impact statement (RMP EIS) is to identify combinations of management practices for and uses of the public lands and resources that would resolve the planning issues. Each alternative is to represent a complete and reasonable interdisciplinary (or multiple use) land use plan to guide future management of the public lands and resources in the planning area. One alternative represents the continuation of present management, or the "no action" alternative. The other alternatives provide a range of choices for solving problems associated with present management. Problems with present management are identified through scoping and issue identification for the planning process, including public involvement.

Analysis of impacts that would be associated with the alternatives is required by BLM planning regulations and the NEPA-based Council on Environmental Quality (CEQ) regulations. Comparison of the differences among the alternatives is also required. Based upon this comparative analysis, BLM managers are able to choose a preferred alternative. The preferred alternative selected may be one of the initial alternatives considered (e.g., Alternatives A, B, and C in this document), it may be made up from portions of two or more of those alternatives, or it may be a completely different alternative.

This chapter presents four resource management plan alternatives, including BLM's preferred alternative for managing the Green River planning area. Alternative A, the "no-action" alternative, would continue present management practices on the basis of existing land use plans. Compared to Alternatives A and C, Alternative B would reduce the level of land use restrictions to emphasize commodity production and provide for more intensive management of forest resources, recreation, minerals, and livestock grazing. Compared to Alternatives A and B, Alternative C would address resource management conflicts by increasing the level of restrictions on land uses and by providing more intensive management of noncommodity resources.

The BLM's preferred alternative would generally place greater emphasis on protection of the natural environ-

ment compared to Alternatives A and B and would prescribe fewer restrictions on land use compared to Alternative C. The Preferred Alternative was developed to balance production or commodity uses with protection of the environment.

## ALTERNATIVES AND MANAGEMENT OPTIONS CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

The following alternatives and management options were considered as possible methods of resolving the planning issues and answering the planning questions, but were eliminated from detailed study because they were unreasonable or not impractical due to technical, legal, or policy factors.

### Elimination of Livestock Grazing

The elimination of livestock grazing from all public lands in the planning area was considered as a possible method of resolving some of the planning issues related to vegetative resources. However, the interdisciplinary team and managers determined that the "no grazing" alternative should be eliminated from detailed study for the following reasons.

Resource conditions on the BLM-administered public lands in the planning area, including range vegetation, watershed, and wildlife habitat, do not warrant prohibition of livestock grazing throughout the planning area. However, reduction or elimination of livestock grazing may be necessary in specific situations where livestock grazing would significantly conflict with other management objectives. Such determinations would be made during activity planning and would be based on several factors including monitoring studies.

- Resource management of the planning area should respond to the need for oil and gas resources. However, not leasing portions of the planning area, in response to other identified resource needs, is addressed in the alternatives analyzed in detail.



## ALTERNATIVES

Public comments received during the scoping process and during preparation of the draft RMP EIS indicated a general acceptance of livestock grazing on the public lands, provided such grazing is properly managed.

Because of the fragmented landownership pattern, especially in the checkerboard portion of the planning area, either exchanges to "block up" public lands would be required or extensive fencing would be needed to exclude livestock from public lands. It is doubtful that enough exchanges with private landowners could be accomplished to sufficiently "block up" public lands, and the amount of fencing needed to exclude livestock would be disruptive to wildlife movement and restrict public access. Also, a checkerboard pattern of fencing on every other square mile of land would be totally impractical.

### Elimination of Timber Harvesting

The 7,943 acres of BLM-administered forest lands in the planning area that are capable of sustaining forest production need to be managed to maintain a healthy, vigorous forest ecosystem. This requires systematic cutting (or harvesting) of the timber over time to control disease and to provide vegetative diversity. Further, there is sufficient local demand for forest products to warrant continued forest harvest. Finally, not harvesting forest products (or not managing the forest lands) would be contrary to the BLM's forest management policy and general mandate for managing the public lands for multiple use, sustained yield, and with environmental integrity.

### Elimination of Mineral Leasing

Closing the planning area to mineral leasing was considered to resolve conflicts with other resource uses. According to previous experience and activity expected in the future, oil and gas and trona would be the leasable minerals resources affected. This proposal was eliminated from further analysis because it would be contrary to BLM policy, that, "except for congressional withdrawals, public lands shall remain open and available for mineral exploration unless (to do otherwise)... is clearly justified in the national interest" (May 24, 1987). In addition, this would be directly contrary to the BLM's multiple use management mandate in FLPMA.

Elimination of leasing of oil and gas resources was considered in the Big Sandy/Salt Wells Oil and Gas Environmental Assessment (EA) (USDI 1981a). At that

time, the proposal was determined to be unacceptable. A review of the proposal, during consideration of possible management options and alternatives for this RMP EIS, revealed that to eliminate leasing of federal oil and gas resources in the planning area continues to be unacceptable and to eliminate leasing of the other federal minerals in the area is also unacceptable.

Public comments received during issue identification and the development of planning criteria indicated general acceptance of mineral leasing and development, provided it is properly managed. It was further pointed out that, in most cases, leasable mineral exploration and development could take place in a manner that would avoid unacceptable adverse impacts to the other resources in the planning area.

In addition, nearly the entire planning area is covered by federal mineral leases and portions of the area are developed. This situation would continue for the entire time this plan is in effect. Eliminating federal mineral leasing in the planning area would not help resolve resource conflicts over the short term or the long term. Resource conflicts tend to be located in specific areas, not planning area wide, and closing the entire area would not be considered reasonable.

### Maximum, Unconstrained Alternatives

Alternatives and general management options that proposed maximum development, production, or protection of one resource at the expense of other resources were not analyzed in detail. The purpose of the approved RMP is to provide multiple use management direction for the planning area. Generally, promoting a single land and resource use by eliminating all others does not meet the objectives of the BLM's multiple use management mandate and responsibilities. However, the alternatives analyzed in detail do include various considerations for eliminating or maximizing individual resource values or uses in specific areas where conflicts exist.

## ALTERNATIVES ANALYZED IN DETAIL

### Introduction/Overview

The descriptions of the four alternatives addressed in this RMP EIS are summarized in Table 2-1. The restrictions that would be applied to surface disturbing

## ALTERNATIVES

activities as conditions of land and resource uses are described first, because all management actions in the planning area would generally operate within the land use constraints of those restrictions. Following the description of surface disturbance restrictions, the management actions that would occur in the planning area under each alternative are described by resource or resource program component. Following these descriptions for the general planning area, this same format is then used to describe the surface disturbance restrictions and management actions for each proposed special management area in each alternative.

The comparisons of the expected environmental consequences of the alternatives are summarized in Table 2-2. The detailed descriptions of the expected environmental consequences expected from implementation of each alternative are described in Chapter 4.

## PREFERRED ALTERNATIVE

The preferred alternative provides the guidance which emphasizes neither resource utilization nor resource protection. The objectives described in this alternative would be used to make resource tradeoffs which could favor resource utilization, resource protection, or a compromise between them.

### Air Quality Management

**MANAGEMENT OBJECTIVE:** The objectives for management of air quality would be to maintain and where possible enhance present air quality management levels; to protect public health and safety and sensitive natural resources; and within the scope of BLM's authority, minimize emissions which may add to acid rain, cause violations of air quality standards, or reduce visibility.

**MANAGEMENT ACTIONS:** Special requirements would be applied on a case-by-case basis to alleviate air quality problems. BLM would continue to participate with other agencies in the collection of air quality data and air quality pollution analysis (Appendix 5-1). Collected air quality data would be used to determine actual or potential impacts from air pollutant emissions and to provide information on proposed emission sources.

Plant facilities would be located where they would not reduce air quality over the planning area, particularly the Flaming Gorge National Recreation Area; or cause

heavy fog conditions that would be hazardous to public health, such as black icing of major highways, or such as extreme and continual fog that could inhibit transportation or recreation activities.

Cooperation to develop and apply visibility standards and guidelines would be encouraged. BLM would cooperate with Wyoming DEQ on review of air quality regulations which could impact BLM-managed activities.

Surface disturbing activities would be managed to not violate air quality regulations (Appendix 5-2).

Construction and surface disturbing activities would be designed with dust control measures to reduce visibility impacts. Coordination with local and state agencies to control dust on unimproved dirt roads would occur. Road binding agents or gravel would be applied on major or heavily utilized access roads. Vegetation would be maintained on backslope and barrow areas.

See other resource management prescriptions in this document for other restrictions that may apply to air quality management activities.

### Candidate Plant Species Management

**MANAGEMENT OBJECTIVE:** The objectives for management of plant species that are candidates for listing as threatened or endangered would be to prevent destruction or loss of the plant species communities and important habitat and to provide opportunities for enhancing or expanding the habitat.

**MANAGEMENT ACTIONS:** Locations of candidate plants and crucial and/or potential habitats would be determined. Known locations of candidate plant species communities (44 locations, about 3,110 acres, (see Map 4) would be protected and closed to: 1) surface disturbing activities that could adversely affect the plants or their habitat (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see the discussion in Lands and Realty Management and Minerals Management for this alternative); 2) the location of new mining claims (withdrawal from mineral location would be pursued); 3) mineral material sales; 4) off-road vehicular travel including those used for geophysical exploration activities; and 5) the use of explosives and blasting.

TABLE 2-1

## SUMMARY COMPARISON OF ALTERNATIVES

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
AIR QUALITY MANAGEMENT	MANAGEMENT OBJECTIVE: To maintain or enhance air quality; to protect public health and safety and to minimize emissions resulting in acid rain or degraded visibility.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: Special requirements would be applied on a case-by-case basis to alleviate air quality problems. Special requirements could include limiting emissions, restricted spacing of project locations, and covering conveyors.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Industrial plant facilities would be located where air quality can be maintained, and where they would not cause hazardous heavy fog conditions. Of particular concern would be the Flaming Gorge National Recreation Area.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	BLM would coordinate with Wyoming DEQ and EPA on air quality standards and regulations that could affect BLM managed activities.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	BLM would coordinate with Wyoming DEQ and EPA on the development of visibility standards and guidelines.	No similar action.	No similar action.	Same as Preferred.
	BLM would coordinate and cooperate with USFS, DEQ, and EPA on monitoring collecting of air quality data.	Same as Preferred.	Same as Preferred.	Same as Preferred.

ALTERNATIVES

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<b>AIR QUALITY MANAGEMENT</b> (continued)	All construction and surface disturbing activities would be designed with dust control measures to reduce visibility impacts. Coordination would occur with local and state agencies to control dust on existing and new unimproved dirt roads.	Minimal dust control measures and restrictions on shipment of products would continue.	Same as Alternative A.	Same as Preferred.
<b>CANDIDATE PLANT &amp; T&amp;E PLANT SPECIES MANAGEMENT</b>	MANAGEMENT OBJECTIVE: To protect and enhance candidate plant species and their essential habitats.  MANAGEMENT ACTIONS: Nine known candidate plant species (44 sites and 3,110 acres), their related habitats, and any species identified in the future would be protected by limiting surface use, vehicle use, and explosive charges.  440 acres would be closed to oil and gas leasing. 2,670 acres would be open to oil and gas leasing with no surface occupancy.  Searches would be required on 39,320 acres of potential habitat prior to projects.	Same as Preferred.  Same as Preferred.	Same as Preferred.  Same as Preferred.	Same as Preferred.  Nine known candidate plant species (44 sites and 39,600 acres), their related habitats, and any species identified in the future would be protected by limiting surface use, vehicle use, and explosive charges.
<b>CULTURAL AND PALEONTOLOGICAL RESOURCES MANAGEMENT</b>	MANAGEMENT OBJECTIVE: To protect and preserve important cultural and paleontological resources. Resource conflicts would be resolved. Opportunities would be expanded for scientific and educational uses of these resources.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>National Register of Historic Places</i>	MANAGEMENT ACTIONS: Any NRHP site would be appropriately protected. Investigations of violations of the Archeological Resources Protection Act would be conducted.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Interpretive materials would be prepared to describe cultural resources in the planning area and their significance.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Historic Trails</i>	Historic trails and sites would be managed to protect their integrity and historic values by limiting vehicle use, surface use, and visual intrusions.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Areas within 1/4 mile or visual horizon, whichever is closer, of historic trail segments that contribute to NRHP eligibility would be avoidance areas for surface disturbing activities.	Same as Preferred.	Same as Preferred.	Areas within 1/2 mile or visual horizon, whichever is closer, of historic trail segments that contribute to NRHP eligibility would be avoidance areas for surface disturbing activities.
	Heavy equipment may be driven on trails providing a site specific analysis indicates trail values would not be adversely affected.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Activity plans would be prepared as necessary for about 800 miles of historic trails and related sites (about 8 sites).	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The Oregon Mormon Pioneer National Historic Trail Management Plan would be implemented.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Other Sites</i>	<p>Archeological resource plans in the Little Colorado Desert, Greater Nitchie Gulch, and Wamsutter Arch concentrated oil and gas development areas would be managed by synthesizing existing data with the objective of facilitating surface disturbing activities without sacrificing significant archeological values.</p> <p>Significant rock art sites and surrounding areas, about 2,500 acres, would be managed to protect their natural values. Surface disturbing activities and visual intrusions would be restricted to ensure protection.</p> <p>Other rock art sites would be managed on a case-by-case basis according to their importance.</p> <p>No surface disturbing activities would be allowed on cultural resource sites, approximately 17,500 acres.</p> <p>Exchanges for approximately 280 acres and cooperative agreements would be pursued to enhance management of cultural resources.</p>	<p>Development in the Little Colorado Desert, Greater Nitchie Gulch, and Wamsutter Arch concentrated oil and gas development areas would be subject to standard 106 compliance procedures.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>No surface disturbing activities would be allowed on cultural resource sites, approximately 6,600 acres.</p> <p>Exchanges for approximately 40 acres and cooperative agreements would be pursued to enhance management of cultural resources.</p>	<p>Same as Preferred.</p> <p>Rock art sites, about 100 acres, would be managed to protect their natural values. Surface disturbing activities and visual intrusions would be restricted to ensure protection.</p> <p>Same as Preferred.</p> <p>No surface disturbing activities would be allowed on cultural resource sites, approximately 4,402 acres.</p> <p>Same as Alternative A.</p>	<p>Development in the Little Colorado Desert, Greater Nitchie Gulch, and Wamsutter Arch concentrated oil and gas development areas would be designed to avoid important cultural sites.</p> <p>Rock art sites and surrounding areas, about 11,400 acres, would be managed to protect their natural values. Surface disturbing activities and visual intrusions would be restricted to ensure protection.</p> <p>Same as Preferred.</p> <p>No surface disturbing activities would be allowed on cultural resource sites, approximately 63,700 acres.</p> <p>Same as Alternative A.</p>

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Paleontology</i>	Paleontological resources would be managed to protect important or sensitive specimens and formations, while allowing hobby collecting for invertebrate fossils in authorized areas. Closing or restricting areas for fossil or paleontological resource protection would be evaluated on a case-by-case basis.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Collecting of vertebrate fossils by qualified personnel would be allowed by written authorization only.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Approximately 16,000 acres of public lands would be managed to protect the natural and geologic features of Steamboat Mountain and Boar's Tusk-Killpecker Sand Dunes.	No similar action.	Same as Alternative A.	Same as Preferred.
FIRE MANAGEMENT	MANAGEMENT OBJECTIVE: To use prescribed fire to meet resource management objectives (such as improvement of wildlife habitat and range condition), and to suppress wildfires to protect resources and public health, safety and property.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: Prescribed fire would be used as a resource management tool. Activity plans would be prepared to address specific applications in accordance with resource objectives.	Same as Preferred.	Same as Preferred.	Same as Preferred.



TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
FIRE MANAGEMENT (continued)	Prescribed burning would be conducted so that ambient air quality standards would not be violated.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Rubber-tired heavy equipment would be allowed in the Pine Springs Expansion area and aboriginal quarry site.	Heavy equipment would not be allowed in Pine Springs Expansion area and aboriginal quarry site.	Same as Alternative A.	Same as Alternative A.
	Wildfire would not be utilized as a management tool.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	No blading in support of fire activities would be allowed on any historic trail unless necessary to protect life or property.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Full suppression of wildfires would occur around populated areas, Hickey, Pine, and Little Mountains, Steamboat Mountain conifer communities, and the structures at Crookston Ranch.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Use of fire retardants and chemicals containing dyes would be prohibited in rock art sites and special management areas.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Fires would be fully suppressed in all forested areas except for prescribed burns of slash piles, and aspen or juniper stands to improve wildlife habitat.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Candidate plant populations would be closed to fire suppression activities.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
FOREST RESOURCE MANAGEMENT	MANAGEMENT OBJECTIVES: To provide production of forest products in accordance with resource goals, objectives, and restrictions.	Same as Preferred.	To optimize forest products including fuelwood, and post and pole production while recognizing other resource needs.	Forest resources would be managed for watershed, wildlife, and scenic resource values and objectives.
	To improve forest resource values and other values (watershed, soils, wildlife habitat, and recreation).	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: The Wind River Front would be managed for commercial forest values to improve the health, vigor, and diversity of forest stands with emphasis on sustaining wildlife habitat requirements. Other forest stands (about 3,900 acres on Pine and Little Mountains) would be managed primarily for other resource values such as watershed, wildlife and scenic values.	All commercial forest resources (about 7,900 acres) would be managed for commercial forest values to improve the health, vigor, and diversity of forest stands.	Same as Alternative A.	Commercial forest lands would be managed to support other resource values. Commercial forest base would be reduced by 657 acres due to no logging buffer (100') along streams and standing water.
<i>Commercial</i>	Commercial and noncommercial forest areas would meet local demand for minor forest products: fuel wood, posts, poles, wildlings and Christmas trees. Permits would be required.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Harvest levels could average 500,000 board feet per year. Priority harvest would be given to mature, decadent, and diseased trees.	Harvest levels could average 500,000 to 1,000,000 board feet per year. Priority harvest would be given to mature, decadent, and diseased trees.	Harvest levels could average 1,000,000 board feet per year. Priority harvest would be given to mature, decadent, and diseased trees.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Commercial</i> (continued)	Harvest activity would be restricted on about 4,370 acres to alleviate adverse affects to wildlife and watershed values.	Same as Preferred.	Harvest activity would be restricted on about 255 acres to alleviate adverse affects to wildlife habitat and watershed values.	Harvest activity would be restricted on approximately 4,120 acres to alleviate adverse affects to wildlife and watershed values.
	Stand replacement of forested areas would be revegetated with tree seedlings within 5 to 15 years.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Slash disposal would be tailored to promote reforestation, minimize erosion and allow game movement.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Clearcuts generally would not exceed 25 acres.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Conifer stands would receive full fire suppression efforts.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Woodland</i>	Approximately 128,000 acres in the woodland forest type would be managed to maintain or enhance watershed, recreation, and wildlife habitat values.	Same as Preferred.	Approximately 128,000 acres in the woodland forest type would be managed to emphasize forest products and forest management.	Same as Preferred.
	Woodland acreage would be maintained and would not be converted to another vegetation type. Treatment of mature stands would be allowed to improve wildlife habitat and watershed conditions. This would include such special project initiatives like "Animal Inn."	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Woodland stands would be available for prescribed fire activities to enhance watershed and wildlife values.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Woodland</i> (continued)	Harvesting of cottonwood trees would be prohibited.	Same as Preferred.	Same as Preferred.	Same as Preferred.
HAZARDOUS MATERIALS AND OTHER HAZARDS MANAGEMENT	MANAGEMENT OBJECTIVE: To protect public and environmental health and safety on BLM-administered public lands, comply with applicable federal and state laws, prevent waste contamination due to any BLM-authorized actions, minimize federal exposure to the liabilities associated with waste management on public lands, and integrate hazardous materials and waste management policies and controls into all BLM programs.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: For BLM-authorized activities that involve hazardous materials or their use, precautionary measures would be used to guard against releases or spills into the environment.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Sale or transfer of public lands on which storage or disposal of hazardous substances has been known to occur, would require public notification of the type and quantity of such substances.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
HAZARDOUS MATERIALS AND OTHER HAZARDS MANAGEMENT (continued)	BLM-administered public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations and contingency plans. Parties responsible for contamination would be liable for cleanup and resource damage costs, as prescribed in federal and state regulations.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	If hazards should be identified, the BLM will provide appropriate warnings and establish precautions for safety hazards associated with the use of any areas on BLM-administered public lands.	Same as Preferred.	Same as Preferred.	Same as Preferred.
LANDS AND REALTY MANAGEMENT	MANAGEMENT OBJECTIVE: To support the goals and objectives of other resource programs, to respond to public demand for land use authorizations, and to acquire administrative and public access where necessary.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: Disposal of public lands would be considered on a case-by-case basis. Approximately 13,000 acres have been identified as meeting the criteria for consideration for disposal. The preferred method of disposal would be land exchanges.	Disposal of public lands would be considered on a case-by-case basis. Approximately 9,000 acres have been identified as available for consideration for disposal. The preferred method would be given to land exchanges.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Land Ownership Adjustment</i>	Acquisition of about 22,000 acres would be considered to facilitate various resource management objectives.	Acquisition of about 31,000 acres would be considered to facilitate various resource management objectives.	Acquisition of about 31,600 acres would be considered to facilitate various resource management objectives.	Acquisition of about 18,000 acres would be considered to facilitate various resource management objectives.
	Suitable lands would be provided to local entities for solid waste disposal through sale or exchange.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Solid waste disposal sites would be sold to lessees if the site does not contain hazardous waste. Any site found to contain hazardous waste, or unsold, would be closed and monitored in accordance with appropriate Wyoming DEQ guidelines.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Preference would be given to Sweetwater County School District #1 for acquisition of the public lands in Lots 3-5, T. 19 N., R. 105 W. (124 acres).	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Utility/Transportation Systems</i>	ROW corridors for utilities and transportation systems would not be designated due to predominate checkerboard private lands.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Major transportation and utility line ROWs would be routed along existing ROW concentration areas, and areas designated as utility windows to the extent possible. Other areas would be considered for rights-of-way on a case-by-case basis.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Approximately 78,200 acres would be closed to rights-of-way.	Approximately 120 acres would be closed to rights-of-way.	Approximately 1,740 acres would be closed to rights-of-way.	Approximately 284,622 acres would be closed to rights-of-way.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Utility/ Transportation Systems (continued)</i>	All advertising signs on public lands adjacent to county roads or roads included in BLM's transportation plan would be required to meet criteria for federal or State highways.	Advertising signs on public lands adjacent to county roads or roads included in BLM's transportation plan, would not be required to meet the criteria for federal or state highways.	Same as Alternative A.	Same as Preferred.
<i>Withdrawals/ Classifications</i>	As needed, new withdrawals would be pursued for protection of important resource values. Up to 161,000 acres of new withdrawals would be pursued.	As needed, new withdrawals would be pursued for protection of important resource values. Up to 35,000 acres of new withdrawals would be pursued.	Same as Alternative A.	As needed, new withdrawals would be pursued for protection of important resource values. Up to 279,000 acres of new withdrawals would be pursued.
	Existing withdrawals no longer needed would be revoked. Approximately 3.5 million acres of withdrawals would be revoked and about 5,200 acres of existing withdrawals would be retained.	Existing withdrawals would not be revoked. Approximately 3.5 million acres of existing withdrawals would remain in effect.	Same as Preferred.	Same as Preferred.
	About 200 acres of Multiple Use Management Classification on public lands would be revoked.	About 200 acres of Multiple Use Classification would be retained.	Same as Preferred.	Same as Preferred.
	Agricultural leases would generally not be allowed in order to ensure reduced salinity and sedimentation of the Green River Basin.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Should an applicant provide evidence of a water right and an acceptable conservation plan, the application for a DLE or lease would be considered on its merits otherwise no public lands would be available for agricultural use under DLE.	Same as Preferred.	Same as Preferred.	Same as Preferred.



TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Access</i>	Access to specific areas may be closed or restricted to protect public health and safety and significant resource values. Easements to provide access to public land (about 300 acres) would be obtained.	Same as Preferred.	Same as Preferred.	Same as Preferred.
LIVESTOCK GRAZING MANAGEMENT	MANAGEMENT OBJECTIVES: To improve forage production and ecological conditions to benefit livestock, wildlife habitat, watershed values and riparian areas.	Same as Preferred.	To improve forage production and ecological conditions would be improved to benefit livestock grazing primarily, and where possible, wildlife habitat, watershed values and riparian areas.	To improve forage production and ecological conditions would be improved to benefit wildlife habitat, watershed values and riparian areas primarily and livestock grazing secondarily.
	To maintain, improve, or restore riparian habitat to enhance forage conditions, wildlife habitat, and stream quality.	Same as Preferred.	To maintain, improve, or restore riparian habitat to enhance forage conditions, primarily for livestock grazing.	To would be maintain, improve, or restore riparian habitat to enhance forage conditions, wildlife habitat, and stream quality.
	To achieve proper functioning condition or better of 75% of riparian areas, in 10 years.	Same as Preferred.	To achieve proper functioning condition or better of 50% of riparian areas, in 10 years.	To achieve proper functioning condition or better of 80% of riparian areas, in 10 years.
	MANAGEMENT ACTIONS: Public lands would be made available for livestock grazing while considering the needs of other resources.	Same as Preferred.	Consideration of the needs of other resources would be secondary to livestock grazing objectives.	Livestock grazing management actions would be designed to enhance wildlife, wild horse, watershed and soils objectives.
	The authorized grazing use would not exceed recognized active preference (currently 318,647 AUMs).	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
LIVESTOCK GRAZING MANAGEMENT (continued)	<p>Anticipated actual use based on a 5-year average would be about 180,000 AUMs but the potential could reach 318,647 AUMs.</p> <p>Permitting for livestock grazing use up to recognized active preference would continue until a change in resource conditions indicates that an adjustment is needed. Any adjustments in livestock grazing use would be made as a result of monitoring and consultation with grazing permittees. Monitoring would be continued or initiated following adjustments in grazing use to assure that grazing and other management objectives are being met.</p> <p>Interdisciplinary rangeland monitoring studies would be conducted to detect changes in grazing use, trend and range condition, and to determine if vegetation objectives would be met for all resource uses (livestock grazing, wild horses, wildlife, etc.).</p> <p>Based on monitoring, plan objectives, and AMPs, kind of livestock and seasons of use may be modified.</p> <p>Developed and semi-developed recreation sites would be closed to livestock grazing.</p>	<p>Anticipated actual use would be the recognized active preference (318,647 AUMs).</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p>	<p>In the long term, anticipated grazing preference would increase by 5,000 AUMs.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Developed and semi-developed recreation sites would be available for livestock grazing.</p>	<p>Anticipated actual use would be about 180,000 to 200,000 AUMs.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Change from cattle to sheep would not be allowed in crucial wildlife winter ranges.</p> <p>Same as Preferred.</p>

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
LIVESTOCK GRAZING MANAGEMENT (continued)	Authorized grazing preference may be reduced in areas with excessive soil erosion, poor condition, or as necessary to provide forage for wildlife, wild horses, or recreational use.	Same as Preferred.	Authorized livestock use numbers would not be adjusted to meet other resource objectives.	Same as Preferred.
	Current authorized livestock use and existing forage reservation for wildlife and wild horses would be maintained. Monitoring would continue or be initiated to determine need for forage allocation adjustments.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Palmer Draw and special enclosures would be closed to livestock grazing (about 1,900 acres).	Same as Preferred.	Palmer Draw and special management areas would be open to livestock grazing.	Same as Preferred.
	Livestock grazing would be managed on 31 I category allotments, 18 M category, and 29 C category allotments.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	AMPs would be developed or existing ones modified. Priority for AMP development and modification is I, M, and then C category allotments. All AMPs would incorporate riparian and desired plant community objectives. Riparian objectives would be developed for C category allotments where riparian values exist.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
LIVESTOCK GRAZING MANAGEMENT (continued)	Grazing systems would be implemented on all I category allotments, and M and C allotments, and designed to maintain or improve plant diversity.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Range improvements would be implemented in I, M and C category allotments. Prior to federal expenditure, a cost/benefit analysis would be conducted.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Vegetation manipulation projects would be designed to meet plan objectives and would require site specific environmental analysis.	Same as Preferred.	Same as Preferred.	Vegetation manipulation projects would be designed primarily to enhance wildlife habitat and to remove decadent stands of brush to meet plan objectives. A site specific environmental analysis would be required.
	Water sources would be developed in crucial wildlife winter ranges only when consistent with wildlife habitat needs.	Same as Preferred.	Water sources would be developed in crucial wildlife winter ranges as necessary and primarily for livestock use.	Water sources would not be developed in crucial wildlife winter ranges unless it would benefit wildlife habitat.
	Additional alternative water supplies or facilities for livestock may be provided to relieve grazing pressure along stream bottoms and improve distribution.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Fences would be allowed in big game use areas and along migration routes provided wildlife conflicts could be resolved. Herder control would be encouraged in those areas.	Fences would be allowed in big game use areas and along migration routes provided conflicts could be resolved.	Same as Alternative A.	Fences would not be constructed solely to facilitate livestock management. No fences would be constructed in big game use areas and wild horse herd areas.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
LIVESTOCK GRAZING MANAGEMENT (continued)	All fences would follow BLM construction standards and design. Fences would be designed and located to ensure wild horse movement is not impeded. New fences would be built on an as-needed basis (approximately 27 miles).	Same as Preferred.	Same as Preferred.	Same as Preferred.
	All fences on public lands causing documented wildlife and wild horse conflicts, would be removed, reconstructed, or modified as necessary.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Noxious weed infestations would be controlled through livestock management, mechanical, chemical or biological means.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Cooperative allotment management plans prepared in coordination with other agencies would be consistent with the approved Green River RMP.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	A site specific activity plan considering wildlife needs would be developed for Pine Canyon, Long Canyon, Cedar Canyon, and Table Mountain area to alleviate conflicts with oil/gas development, wildlife use, and livestock grazing.	The present boundaries and management prescriptions would continue in Pine Canyon, Long Canyon, Cedar Canyon, and Table Mountain area.	Same as Alternative A.	A new allotment would be identified and grazing plan developed considering wildlife needs for Pine Canyon, Long Canyon, Cedar Canyon, and Table Mountain area to alleviate conflicts with oil/gas development, wildlife use, and livestock grazing.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
LIVESTOCK GRAZING MANAGEMENT (continued)	Unallotted forage on public land (15,100 acres) would be allocated to livestock grazing, wildlife, wild horses, and/or watershed resources on a case-by-case basis after consideration of all resource objectives.	Same as Preferred.	Same as Preferred.	Unallotted forage on about 15,100 acres would be reserved for wildlife, wild horses or to improve watershed condition.
	Forage increases would be allocated on a case-by-case basis to livestock grazing, wildlife, wild horses, and/or watershed resources once a site specific analysis is evaluated.	Same as Preferred.	Forage increases would be allocated to livestock as first priority.	Forage increases would be allocated to wildlife or reserved for watershed, wild horses, and recreational uses.
	Salt blocks for livestock would not be placed within 500 feet of live water, wetlands or riparian areas, nor on areas inhabited by candidate plant species.	Same as Preferred.	Salt blocks for livestock would not be placed within 100 feet of live water, wetlands or riparian areas nor on areas inhabited by candidate plants.	Same as Preferred.
	Combining and splitting allotments would be considered if it would help meet resource management objectives. For example, the Henrys Fork would be split into 3 allotments and managed according to revised AMPs. The Cottonwood Creek and Antelope Wash areas would be consolidated into 1 2-pasture allotment and managed according to a new AMP.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Stock driveways 4, 21, and 23 would be revoked.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<b>MINERALS MANAGEMENT</b>	<b>MANAGEMENT OBJECTIVE:</b> To maintain or enhance opportunities for mineral exploration and development while protecting other resource values.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Leasable Minerals</i>	5,800 acres in incorporated cities and towns would be closed to leasing for all leasable minerals.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	225,110 acres of WSAs would be closed to leasing in accordance with wilderness Interim Management requirements.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Oil and Gas</i>	<b>MANAGEMENT ACTIONS:</b> About 331,020 acres of BLM-administered Federal mineral estate would be closed to leasing to protect other resource values.	About 255,550 acres would not be leased.	About 231,440 acres would be closed to any leasing.	About 398,570 acres would be closed to leasing.
	About 3,162,490 acres of BLM-administered Federal mineral estate would be open to leasing subject to appropriate restrictions.	About 3,235,230 acres of BLM-administered Federal mineral estate would be open to leasing subject to appropriate restrictions.	About 3,256,060 acres of BLM-administered Federal mineral estate would be open to leasing subject to appropriate restrictions.	About 3,099,830 acres of BLM-administered Federal mineral estate would be open to leasing subject to appropriate restrictions.
	About 327,480 acres would be leased with a no surface occupancy stipulation.	About 168,410 acres would be leased with a no surface occupancy stipulation.	About 33,132 acres would be leased with a no surface occupancy stipulation.	About 753,070 acres would be leased with a no surface occupancy stipulation.
	About 1,668,440 acres would be leased with seasonal restrictions to protect wildlife resources.	About 2,393,030 acres would be leased with seasonal restrictions to protect wildlife resources.	About 260,020 acres would be leased with a seasonal restriction to protect wildlife resources.	About 2,403,630 acres would be leased with seasonal restrictions to protect wildlife resources.
	Surface disturbance restrictions would be placed on 1,228,080 acres.	Surface disturbance restrictions would be placed on 1,097,640 acres.	Surface disturbance restrictions would be placed on 870,230 acres.	Surface disturbance restrictions would be placed on 1,261,060 acres.



TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Geothermal</u>	Geothermal resources would be available for leasing in areas that are open to oil and gas leasing. Areas closed to oil and gas leasing are also closed to geothermal leasing.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Generally, the same prescriptions that apply to oil and gas leasing and development would apply to geothermal activities.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<u>Coal</u>	MANAGEMENT ACTIONS: With appropriate limitations and mitigation requirements for the protection of other resource values, all BLM-administered public lands and Federal coal lands in the planning area, except for those areas closed to coal exploration and sodium prospecting, would be open to coal resource inventory and exploration.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	About 463,000 acres of Federal coal lands within the Coal Development Potential Area would be open to further consideration for coal leasing and development with appropriate and necessary conditions and requirements for protection of other land and resource values and uses.	About 76,608 acres of Federal coal lands within the Coal Development Potential Area would be open to further consideration for coal leasing and development with appropriate and necessary conditions and requirements for protection of other land and resource values and uses.	Same as Preferred.	About 47,000 acres of Federal coal lands within the Coal Development Potential Area would be open to further consideration for coal leasing and development with appropriate and necessary conditions and requirements for protection of other land and resource values and uses.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Coal</u> (continued)	<p>All Federal coal lands that are open to further consideration for leasing and development would be subject to continued field investigations, studies, and evaluations to determine if certain methods of coal mining can occur without having a significant long-term impact on wildlife, in general, and on threatened and endangered plant and animal species and their essential habitats.</p> <p>The North Fork Vermillion Creek drainage (about 405 acres) would be closed to further consideration for Federal coal leasing and development.</p>	<p>Same as Preferred.</p> <p>No similar action.</p>	<p>Same as Preferred.</p> <p>The North Fork Vermillion Creek drainage (about 405 acres) would be open to further consideration for Federal coal leasing and development and would be managed as an avoidance area. Irreparably impacted wetlands would be replaced with areas of equal or greater value.</p>	<p>Same as Preferred.</p> <p>Same as Preferred.</p>

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Coal</u> (continued)	<p>Big game crucial winter ranges and birthing areas (about 276,200 acres) would be open to further consideration for Federal coal leasing and development with a provision for maintaining a balance between Federal coal leasing and development and adequate crucial winter range and birthing area habitats.</p> <p>Satisfactory abandonment and adequate reclamation of mined lands in big game crucial winter ranges and birthing areas would be required before additional Federal coal leasing and development would be initiated in the same crucial winter ranges and birthing areas.</p> <p>The greater Cooper Ridge and Elk Butte areas (about 25,765 acres) would be open to further consideration for Federal coal leasing and development, pending further study to define deer and antelope crucial winter range and determine if coal mining would have a significant long-term impact on the deer and antelope herds.</p>	<p>No similar action.</p> <p>The area known as Cooper Ridge would be acceptable for further leasing consideration and coal development by surface mining methods, pending studies to determine the extent and importance of potential deer and antelope crucial winter range in the area and the extent and significance of coal mining impacts on the area.</p>	<p>Big game crucial winter ranges and birthing areas (about 276,200 acres) would be open to further consideration for Federal coal leasing and development provided that management actions listed for habitat for wildlife species of high State interest are applied and long-term impacts are avoided. No provision for maintaining a balance between coal development and crucial winter range would be included.</p> <p>Same as Preferred.</p>	<p>Big game crucial winter ranges (about 276,200 acres) would be closed to further consideration for Federal coal leasing and development.</p> <p>The greater Cooper Ridge and Elk Butte areas (about 25,765 acres) would be closed to further consideration for Federal coal leasing and development.</p>

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Coal</u> (continued)	About 13,340 acres of Federal coal lands would be open to consideration for further leasing and development for subsurface mining methods only, for the protection of important petroglyph sites, other important cultural resource values, and important geologic and ecologic features (refer to Special Management Area section for more details).	No similar action.	About 3,010 acres of Federal coal lands would be open to further consideration for leasing and development for subsurface mining methods only, for the protection of important petroglyph sites, other important cultural resource values, and important geologic and ecologic features (refer to Special Management Area section for more details).	About 25,952 acres of Federal coal lands would be closed to further consideration for leasing and development, for the protection of important petroglyph sites, other important cultural resource values, and important geologic and ecologic features (refer to Special Management Area section for more details).
	-any Federal coal leasing and development on these lands would include a no surface occupancy requirement for any related ancillary facilities or surface disturbing activities.	-no similar action.	-same as Preferred.	-no similar action.
	-these same lands would be closed to surface mining methods and any related activities.	-no similar action.	-same as Preferred.	-same as Preferred.
	In general, cultural sites on Federal coal lands would be managed as avoidance areas for surface disturbing activities. Except for those closed to leasing, or to surface mining methods, or having a no surface occupancy restriction, this includes cultural sites that are either listed or eligible for listing on the NRHP. If not possible to avoid cultural sites, intensive mitigation of the surface disturbing activities would be emphasized.	No similar action.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Coal</u> (continued)	<p>-if necessary, appropriate buffer zones would be established to protect sites that are listed or eligible for listing on the NRHP. Data recovery measures would be implemented in the context of an NRHP district to maximize efficiency of data recovery efforts.</p> <p>About 12,200 acres of Federal coal lands within the City of Rock Springs Expansion Area would be open to further consideration for coal leasing and development with requirements to assure that subsidence will be avoided or mitigated and that public health and safety will not be adversely affected. A leasing plan would be prepared prior to issuing any leases.</p> <p>Grouse nesting areas (sage or sharptail grouse) would be open to further consideration for Federal coal leasing and development with a requirement to delay any mining or related surface disturbing activities that would adversely affect an occupied grouse nest, until nesting is completed.</p>	<p>-no similar action.</p> <p>About 1,500 acres of Federal coal lands within the City of Rock Springs Expansion Area would be closed to further consideration for coal leasing and development.</p> <p>No similar action.</p>	<p>-same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p>	<p>-no similar action.</p> <p>Same as Alternative A.</p> <p>Grouse nesting areas (sage and sharptail grouse) would be closed to further consideration for Federal coal leasing and development.</p>

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Coal</u> (continued)	Active grouse leks (sage and sharptail grouse) and the area within a 1/4 mile radius of active leks would be managed as avoidance areas for surface disturbing activities and would be open to further consideration for Federal coal leasing and development with the following requirements:	No similar action.	Same as Preferred.	Active grouse leks (sage and sharptail grouse) and the area within a 1/4 mile radius of active leks would be closed to further consideration for Federal coal leasing and development.
	-surface disturbing activities associated with coal exploration and development would be avoided in these areas, if possible. If not possible, intensive mitigation would be emphasized.	-no similar action.	-same as Preferred.	-no similar action.
	-permanent and high profile structures would be prohibited in these areas.	-no similar action.	-no similar action.	-no similar action.
	-during the grouse mating season, surface uses and activities would be prohibited between the hours of midnight and 9:00 AM, within a 1/2 mile radius of active leks.	-no similar action.	-no similar action.	-no similar action.
	No similar action.	About 50,714 acres of Federal coal lands would be open to surface coal mining methods.	No similar action.	No similar action.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Cool</u> (continued)	No similar action.	About 87,214 acres of Federal coal lands would be open to subsurface mining methods.  -within this area, about 7,186 acres would be restricted to only very limited surface operations and impacts and 1,280 acres would be restricted by a no surface occupancy requirement.	No similar action.	No similar action.
	Wetland and riparian areas on Federal coal lands (about 2,000 acres) would be managed as avoidance areas for surface disturbing activities and would be open to consideration for coal leasing and development with the requirement that related surface disturbing activities would be avoided in these areas, if possible. If not possible, intensive mitigation would be emphasized.	No similar action.	Same as Preferred.	Wetland and riparian areas on Federal coal lands (about 2,000 acres) would be closed to further consideration for coal leasing and development.
<u>Areas of BLM-Administered Public Land Surface Over State-Owned Coal</u>	No similar action.	Of the 10,880 acres of BLM-administered public land surface overlying state-owned coal that were reviewed, about 7,840 acres would be open to surface coal mining methods and about 10,812 acres would be open to subsurface mining methods.	No similar action.	No similar action.
	No similar action.	-of the 10,812 acres open to subsurface mining methods, about 570 acres would be closed to any related surface operations and impacts.	No similar action.	No similar action.



TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Areas of BLM- Administered Public Land Surface Over State-Owned Coal</u> (continued)	No similar action.	-those parcels of BLM-administered public land surface overlying state-owned coal, that are within the planning area but were not reviewed in the coal unsuitability review and multiple use conflict evaluations, would be reviewed on a case-by-case basis, should the state lease the coal.	No similar action.	No similar action.
	About 30,000 acres of BLM-administered public land surface overlying state-owned coal would be open to further consideration for coal leasing and development with appropriate and necessary conditions and requirements for protection of other land and resource values and uses (including big game crucial winter range, grouse leks, cultural values, geologic features, rights-of-way, and City of Rock Springs expansion area).	No similar action.	Same as Preferred.	About 30,000 acres of BLM-administered public land surface overlying state-owned coal would be closed to further consideration for coal leasing and development for protection of other land and resource values and uses (including big game crucial winter range, grouse leks, cultural values, geologic features, rights-of-way, City of Rock Springs expansion area).

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u><i>Coal PRLAs</i></u>	Processing of the Beans Spring coal PRLAs would be completed. In the preparation of the EIS for this PRLA project, special attention will be given to those sensitive value areas identified through the unsuitability review and multiple use conflict evaluation. The EIS will result in development of needed stipulations for the protection of sensitive values. These protective stipulations will be carried through the final processing and leasing decisions for the PRLA project, which will result in determining if the preference right applicant is successful in meeting the final showing requirements and is entitled to a preference right (non-competitive) Federal coal lease for the Beans Spring coal project area.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<u><i>Sodium</i></u>	MANAGEMENT ACTION: The known sodium leasing area would be open to exploration and leasing consideration, but would be closed to prospecting permits.  The remainder of the planning area would be open for prospecting, except those areas closed to surface mining, mineral leasing, and mechanical prospecting activity (such as geophysical).	Same as Preferred.  Same as Preferred.	Same as Preferred.  Same as Preferred.	Same as Preferred.  Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Sodium</u> (continued)	Incorporated cities and towns would be closed to leasing in accordance with 43 CFR 3500. This is a non-discretionary closure.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Other Leasables</i>	MANAGEMENT ACTIONS: Leasing would be considered on a case-by-case basis and would be subject to the resource management prescriptions applied to oil and gas, coal, sodium, etc.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Mineral Materials</i>	MANAGEMENT ACTIONS: Sale areas, community pits, and common use areas would be established as needed.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Locatable Minerals</i>	Topsoil would not be sold.	Same as Preferred.	Topsoil would be provided.	Same as Preferred.
	MANAGEMENT ACTIONS: A plan of operations would be required for any surface disturbance activity in designated special management areas (ACECs, etc.) and areas closed to off-road vehicle travel.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Other than lands withdrawn from mineral location, the area would be open to mineral location, exploration, and development.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Existing mineral classifications and withdrawals no longer needed would be revoked.	Existing mineral classifications and withdrawals would remain in affect.	Same as Preferred.	Same as Preferred.
<i>Geophysical</i>	MANAGEMENT OBJECTIVE: To provide opportunity for exploration of mineral resources and geologic data, while protecting other resource values.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Geophysical</i> (continued)	Explosive charges would not be allowed if environmental analysis shows that unacceptable adverse impacts would occur.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	About 9,652 acres would be closed to the use of explosive charges.	About 3,262 acres would be closed to the use of explosive charges.	Same as Alternative A.	About 3,597 acres would be closed to the use of explosive charges.
	The management prescription for off-road vehicle travel would apply to geophysical operations throughout the planning area.	The management prescriptions for off-road vehicle travel would not apply to geophysical operations in all areas. Vehicles would not be limited to existing roads and trails unless analysis determines it is necessary.	The management prescriptions for off-road vehicle travel would not apply in all areas.	The management prescriptions for off-road vehicle travel would apply to geophysical operations. Areas closed to leasing would also be closed to geophysical vehicle use.
	Geophysical travel through developed and semi-developed recreation sites would be restricted to existing roads and trails.	Same as Preferred.	Same as Preferred.	Same as Preferred.
ORV MANAGEMENT	Geophysical activity would be limited within 1/4 mile or visual horizon of historic trails.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT OBJECTIVE: To provide opportunities for off-road vehicle travel in conformance with other resource management objectives.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: The 10,500 acres in the Killpecker Sand Dunes would remain open. No new open areas would be established.	Same as Preferred.	5,500 acres in the Killpecker Sand Dunes would be open to ORV travel. No new ORV open areas would be established.	Same as Preferred.
	About 20,935 acres would be closed to ORV travel to protect other resource values.	About 77,510 acres would be closed to ORV travel to protect other resource values.	About 82,510 acres would be closed to ORV travel to protect other resource values.	About 111,590 acres would be closed to ORV travel to protect other resource values.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
ORV MANAGEMENT (continued)	Approximately 137,672 acres would remain closed to off-road vehicle use to protect naturalness, solitude, and opportunities for unconfined recreation.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Seasonal restrictions would be applied on big game crucial winter ranges on an as-needed basis to protect wintering wildlife.	Same as Preferred.	No seasonal restrictions would apply to ORVs.	Same as Preferred.
	About 890 acres would have seasonal restrictions applied on an as-needed basis to protect nesting raptors.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	About 127,120 acres would have seasonal restrictions applied to off-road vehicle travel on an as-needed basis to protect big game birthing areas.	Same as Preferred.	No seasonal restrictions would apply to ORVs.	Same as Preferred.
	Vehicular travel would be limited to designated roads and trails on about 295,740 acres.	Vehicular travel would be limited to designated roads and trails on about 20 acres.	Vehicular travel would be limited to designated roads and trails and site specific transportation plans prepared on about 1,320 acres.	Vehicular travel would be limited to designated roads and trails and site specific transportation plans prepared on about 330,870 acres.
	Vehicular travel would be limited to existing roads and trails on the remainder of the planning area, approximately 3,180,353 acres.	Vehicular travel would be limited to existing roads and trails on the remainder of the planning area, approximately 3,408,998 acres.	Vehicular travel would be limited to existing roads and trails on the remainder of the planning area, approximately 3,407,698 acres.	Vehicular travel would be limited to existing roads and trails on the remainder of the planning area, approximately 3,044,068 acres.
	Over-the-snow vehicle travel would generally follow the same prescriptions as for other vehicles. Refer to other sections of the document for specific requirements.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
ORV MANAGEMENT (continued)	Some types of motor vehicle use would be allowed under the "necessary tasks" work exemption provided resource damage did not occur.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Except for those areas that would be designated as closed to vehicle travel, geophysical activities would be considered under the guidelines of necessary tasks (see glossary) provided that a site specific analysis determines resource objectives could be met.	Same as Preferred.	Same as Preferred.	Same as Preferred.
RECREATION RESOURCE MANAGEMENT	MANAGEMENT OBJECTIVE: To ensure continued availability for recreational opportunities and meet legal requirements for public health and safety.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: Most public lands would be open and available for recreation use.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Special recreation permits would be considered on a case-by-case basis.	Same as Preferred.	Special recreation permits, including hill climb, would be considered on a case-by-case basis.	Same as Preferred.
	Recreation opportunities would be a major management emphasis in the Oregon Buttes, Honeycomb Buttes, Steamboat Mountain, Leucite Hills, Red Creek, Pine and Little Mountains, and Cedar Canyon areas.	Recreation opportunities would be a major management emphasis in the Wind River Front, Sweetwater River, Steamboat Mountain, Killpecker Sand Dunes, Leucite Hills, Red Creek, Pine and Little Mountains, and Cedar Canyon areas.	Same as Preferred.	Recreation opportunities would be a major management emphasis in the Wind River Front, Killpecker Sand Dunes, Oregon Buttes, Honeycomb Buttes, Steamboat Mountain, Leucite Hills, Red Creek, Pine and Little Mountains, and Cedar Canyon areas.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
RECREATION RESOURCE MANAGEMENT (continued)	The Continental Divide National Scenic Trail, Continental Divide Snowmobile Trail, the Green River, and the Wind River Front (265,188 acres and 24 miles of trails) would be designated special recreation management areas to enhance recreation opportunities.	The Killpecker Sand Dunes, and Oregon and Mormon Pioneer National Historic Trails (about 142,000 acres) would remain designated special recreation management areas.	The Wind River Front, the Green River, and the Continental Divide Snowmobile Trail (about 265,188 acres and 9 miles of trails) would be designated special recreation management areas.	The Wind River Front and the Green River (about 265,0188 acres) would be designated special recreation management areas.
	The Green, Big Sandy, and Sweetwater Rivers, and Bitter Creek between the towns of Green River and Rock Springs would be managed for recreation uses.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	BLM would cooperate in the establishment of a green belt along the Green River from Fontenelle dam to Flaming Gorge Reservoir.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	About 1.5 miles of the Big Sandy River adjacent to the Bridger-Teton Forest boundary would be managed to retain pristine values. Actions would not be allowed that would alter these river values.	On about 1.5 miles of the Big Sandy River, actions could be allowed provided watershed/water quality, recreation, and riparian objectives would be met.	Same as Preferred.	Same as Preferred.
	A 14-day camping limit would be maintained on public lands.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Dispersed camping would not occur on or within 200' of water, springs, seeps, and ponds or on posted wildlife and livestock waters.	Dispersed camping would be allowed around livestock waters and on or within 100' of springs, seeps, and ponds.	Dispersed camping would be allowed adjacent to livestock and wildlife waters, springs, seeps, and ponds.	Dispersed camping would not be allowed on or within 500' of livestock or wildlife waters, springs, seeps, and ponds.



TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
RECREATION RESOURCE MANAGEMENT (continued)	New recreation sites would not be developed in or within 500' of riparian areas and floodplains.	Recreation sites would be developed within 500' of riparian areas and floodplains under the guidelines of Executive Orders 11988 and 11990 to protect these areas.	Same as Alternative A.	New recreation sites could not be developed in riparian areas and floodplains.
	Vegetation buffer strips would be maintained between developed recreational facilities and surface water.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The 14-Mile recreation site would be closed to development activities such as powerlines, pipelines, or well pads. The area would be open to development of recreation site facilities.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Areas within 1/4 mile of developed, undeveloped, and semi-developed recreation sites would be avoidance areas for activities such as roads, powerlines, pipelines, and well pads. These areas would be open to development of recreation site facilities.	Areas within 1/4 mile of developed recreation sites would be avoidance areas for activities such as roads, powerlines, pipelines, and well pads. These areas would be open to development of recreation site facilities.	Same as Preferred.	Same as Alternative A.
	About 270 acres would be managed for geologic features.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Travel routes that meet the criteria for backcountry byways would be designated.	No backcountry byways would be designated.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
RECREATION RESOURCE MANAGEMENT (continued)	Recreation sites, development projects, and recreation access and use would be managed to maintain or improve wetland habitat conditions along intensively used streams and reservoirs.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Waters at undeveloped recreation sites would be monitored. If the water is not potable, signs would be posted.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Posting information and directional signs would be necessary in some areas. Sign posting would be provided to promote visitor use of the various use areas consistent with other resource management objectives.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Cutting of trees and firewood for camping purposes would be limited to designated areas.	No similar action.	Same as Alternative A.	Areas in and around developed and semi-developed camping and recreation areas would be closed to tree and firewood cutting.
VEGETATION MANAGEMENT	MANAGEMENT OBJECTIVE: To provide for plant diversity (desired plant community) to meet wildlife, watershed, wild horse and livestock management objectives and design vegetation treatments to meet these objectives.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
VEGETATION MANAGEMENT (continued)	MANAGEMENT ACTIONS: Desired plant community objectives would be established for the planning area if possible when ecological site inventory data becomes available. All activity plans would incorporate desired plant community objectives.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Mechanical, biological, chemical, and prescribed fire would be the methods utilized to treat vegetation.	Same as Preferred.	Same as Preferred.	Mechanical, biological, and prescribed fire could be the methods utilized to treat vegetation. Chemical treatments would be used only for weed control.
	Prescribed fire would be the preferred method of treatment.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Other vegetation manipulation methods would be considered on a case-by-case basis depending on objectives and cost benefits.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Prescribed burns would not be conducted in areas with surface coal or other fossil fuel surface outcrops.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	About 67,700 acres would be treated to increase forage availability and enhance wildlife habitat.	About 26,700 acres would be treated to increase forage availability and enhance wildlife habitat.	About 290,000 acres would be treated, primarily to enhance livestock forage.	About 41,000 acres would be treated primarily to enhance wildlife habitat.
	Prescribed burns generally would be conducted in areas having greater than 35 percent sagebrush composition, 20 percent desirable grass composition, and greater than 10 inches of precipitation.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
VEGETATION MANAGEMENT (continued)	All treated areas would be rested from livestock grazing for 2 growing seasons. Treated areas would be fenced from livestock if necessary.			
	Vegetation treatments would be designed to enhance edge effect, cover, and aesthetics.	Same as Preferred.	Vegetation treatments would be designed for maximum brush removal; design for edge effect cover and aesthetics would be secondary.	Same as Preferred.
	No more than 10 percent of the sagebrush in antelope and mule deer crucial winter ranges and no more than 20 percent within two miles of sage grouse leks could be treated in a 10-year period.	Same as Preferred.	No more than 20 percent of the sagebrush within antelope and mule deer crucial winter ranges, and within 1/2 mile of sage grouse leks could be treated in a 10-year period.	No more than 5 percent of the sagebrush within antelope and mule deer crucial winter ranges and 10 percent within two miles of sage grouse leks could be treated in a 20-year period.
	Additional riparian acreage may be acquired (840 acres).	Same as Preferred.	Same as Preferred.	Same as Preferred.
	All brush control projects would involve site specific environmental analysis; coordination with affected livestock operators and the WGFD; and would include multiple use objectives for other resource values including livestock, wildlife, and watershed.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Vegetation treatments in VRM Class II areas (5,650 acres) would not exceed 40 acres per treatment and no more than 10 percent of the area would be treated in a 10-year period.	Same as Preferred.	Vegetation treatments in VRM Class II areas (14,125 acres) would not exceed 100 acres per treatment and no more than 25 percent of the area would be treated within 10 years.	Vegetation treatments in VRM Class II areas (5,650 acres) would not exceed 40 acres per treatment and no more than 10 percent of the area would be treated in a 20-year period.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
VEGETATION MANAGEMENT (continued)	Riparian and adjacent upland areas would not be treated simultaneously.	Riparian and adjacent upland areas could be treated simultaneously.	Same as Alternative A.	Same as Alternative A.
	Vegetation buffer strips 100' wide would be left intact adjacent to perennial streams.	Same as Preferred.	No buffer strips would be required for treatments adjacent to perennial streams.	Vegetation buffer strips 300' wide would be left intact adjacent to perennial streams.
	No more than 50 percent of the vegetation cover would be removed from the inner gorge of intermittent and ephemeral drainages to protect watershed values.	Same as Preferred.	Specific vegetation cover objectives would be based on livestock grazing objectives.	Same as Preferred.
VISUAL RESOURCE MANAGEMENT	Herbicide loading sites would not be located closer than 500' to live water, floodplains, or riparian areas.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT OBJECTIVE: To maintain or improve scenic values, visual quality, and establish priorities in conjunction with other resource values.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: VRM classes would be modified to enhance cultural, wild horse viewing, and special management area values. In some areas VRM, classes would be elevated.	VRM classes would not modify.	VRM classes would modify to facilitate production activities. In certain areas, VRM classes would be lowered.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<b>VISUAL RESOURCE MANAGEMENT</b> (continued)	Projects would be designed to meet the objectives of the established visual classifications and appropriate mitigation applied. Facilities including those related to existing or new wells, structures, powerlines, linear rights-of-way, etc. would be screened, painted, or designed to blend with the surrounding landscape.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Visual resources along Highway 28 in Fremont County would be protected and proposed alterations would be designed to retain the existing character of the landscape.	Visual resources along Highway 28 in Fremont County would not be fully protected and some modifications to the landscape could occur.	Same as Preferred.	Same as Preferred.
	The VRM classification for I-80 between Rock Springs and Green River would be managed for Class II values. Views along other major highways would be managed according to the current classification.	Views along major highways would be managed according to their current VRM classification. (The VRM classification for I-80 between Rock Springs and Green River would be Class III.)	Same as Alternative A.	Views along all major highways would be managed for Class II values.
	Suitable wild horse herd viewing areas would be identified and developed.	Only one wild horse viewing area would be established on Highway 191.	Same as Preferred.	Same as Alternative A.
	-visual intrusions would not occur within a 1/2 mile radius.	-visual intrusions within the visual horizon that could interfere with seeing wild horses would not be allowed.	-same as Preferred.	-visual intrusions would not be allowed within a 2-mile radius.
	Activities such as structures and facilities that could be viewed from Fontenelle Reservoir would be designed to blend into the landscape.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
VISUAL RESOURCE MANAGEMENT (continued)	Proposed alterations on the lands that would be classified as VRM Class II areas (about 498,000 acres) would be designed to retain the existing character of the landscape.	Proposed alterations on the lands that would be classified as VRM Class II areas (about 423,000 acres) would be designed to retain the existing character of the landscape.	Proposed alterations on the lands that would be classified as VRM Class II areas (about 390,000 acres) would be designed to retain the existing character of the landscape.	Proposed alterations on the lands that would be classified as VRM Class II areas (about 500,000) would be designed to retain the existing character of the landscape.
	Proposed alterations on the lands that would be classified as VRM Class III (about 330,000 acres) would be designed to partially retain the existing character of the landscape.	Proposed alterations on the lands that would be classified as VRM Class III (about 330,000) would be designed to partially retain the existing character of the landscape.	Proposed alterations on the lands that would be classified as VRM Class III (about 215,000) would be designed to partially retain the existing character of the landscape.	Proposed alterations on the lands that would be classified as VRM Class III (about 328,000) would be designed to partially retain the existing character of the landscape.
	Actions on the lands that would be classified as VRM Class IV areas (about 2,783,000) would provide for management activities which require major modification of the existing character of the landscape.	Actions on the lands that would be classified as VRM Class IV areas (about 2,858,000 acres) would provide for management activities which require major modification of the existing character of the landscape.	Actions on the lands that would be classified as VRM Class IV areas (about 3,006,000) would provide for management activities which require major modification of the existing character of the landscape.	Actions on the lands that would be classified as VRM Class IV areas (about 2,783,000) would provide for management activities which require major modification of the existing character of the landscape.
	Management actions in rehabilitation areas would be designed to reclaim and improve visual resource values to achieve a higher classification (Classes III and IV) (24,000 acres).	Same as Preferred.	Same as Preferred.	Same as Preferred.
WATERSHED/SOILS MANAGEMENT	MANAGEMENT OBJECTIVES: To stabilize soils, increase vegetation production, to maintain or improve surface or ground water quality and protect, maintain, or improve wetlands, floodplains, and riparian areas.	Same as Preferred.	Same as Preferred.	Same as Preferred.



TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WATERSHED/SOILS MANAGEMENT (continued)	MANAGEMENT ACTIONS: Land uses and surface disturbing activities would be designed to promote reduced channel erosion, specifically bank erosion, where it would result in severe losses of riparian habitat, reduced accelerated surface erosion in areas having severe erosion susceptibility. Damaged wetland and riparian areas would be restored.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Surface disturbing activities would be avoided in areas with highly erodible or difficult to reclaim soils.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Stream sediment, phosphate, and salinity load would be reduced where possible.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Wetlands and floodplains (about 95,550 acres) within the planning area would be managed in accordance with Executive Orders 11988 and 11990.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Activity plans would include measures to reduce salinity in the Jack Morrow and Eighteen Mile watersheds and Big Sandy seeps would be completed and implemented.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Activity plans would also be designed to reduce phosphate loading to Fontenelle and Flaming Gorge Reservoirs.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WATERSHED/SOILS MANAGEMENT (continued)	Rehabilitation plans would be developed and implemented on newly disturbed areas and for about 309,500 acres of existing disturbed sites.	Same as Preferred.	Rehabilitation plans would be written only for newly developed areas.	Rehabilitation plans would be developed and implemented on newly disturbed areas and for about 546,793 acres of existing disturbed sites.
	Requirements for water quality improvement would be incorporated into activity plans as necessary. Priority areas include the Upper Bitter Creek, Four J Basin, Vermillion Creek, and Upper Salt Wells Creek watersheds.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Areas within 500' of 100-year floodplains, wetlands, or perennial streams, and 100' of the inner gorge of intermittent and large ephemeral drainages would be avoidance areas for surface disturbing activities.	Same as Preferred.	Same as Preferred.	Areas within 500' of 100-year floodplains would be closed to surface disturbing activities. Linear crossings would be considered on a case-by-case basis. Areas within 100' of the inner gorge of intermittent and large ephemeral drainages would be avoidance areas for surface disturbing activities.
	Slopes greater than 25 percent (198,720 acres) would be avoidance areas for surface disturbing activities.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	To protect watershed resources during wet periods, vehicle travel, particularly large or heavy truck traffic, would not be allowed unless travel occurs on roads that are graveled for all-season use.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WATERSHED/SOILS MANAGEMENT (continued)	Crossings of ephemeral, intermittent, and perennial streams associated with road and utility line construction would generally be restricted until after spring runoff and normal flows are established.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Areas containing soils with permeability rates of no more than 0.1 foot/day and water tables less than 100 feet from the surface, would be closed to such uses as industrial plants, mill sites, tailing ponds, sewage lagoons, etc.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Areas within 100-year floodplains, wetlands, or riparian areas would be closed to construction of new permanent structures (e.g., storage tanks, well pads, structures, etc.).	Same as Preferred.	Areas within 100-year floodplains, wetlands, or riparian area would be open to consideration of permanent structures.	Same as Preferred.
	Construction and maintenance of new main artery roads would be designed to reduce sediment, salt, and phosphate loading to the Green River.	New main artery roads would be designed to reduce sediment, salt, and phosphate loading to the Green River.	New main artery roads would be designed to reduce sediment, salt, and phosphate loading to the Green River.	Same as Preferred.
	Running surfaces would be graveled unless sufficient aggregate exists on the road.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Existing main artery roads would be upgraded.	No similar action.	Existing main artery roads would be upgraded on an as-needed basis.	Same as Preferred.
	Lining of reserve and disposal pits would be required in soils with a permeability of greater than 0.06 inch per hour.	Requirements for lining of reserve and disposal pits would be determined on a case-by-case basis.	Same as Alternative A.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WATERSHED/SOILS MANAGEMENT (continued)	Aquifer recharge areas would be managed to protect groundwater quality, through maintenance of the vegetative cover that contributes to recharge, and limiting surface disturbing activities. Activities within the Superior recharge area would be allowed only if groundwater quality would be protected.	Same as Preferred.	Same as Preferred.	Same as Preferred.
WILD AND SCENIC RIVER MANAGEMENT	See Wild and Scenic Rivers under Special Management Areas.	See Wild and Scenic Rivers under Special Management Areas.	See Wild and Scenic Rivers under Special Management Areas.	See Wild and Scenic Rivers under Special Management Areas.
WILD HORSE MANAGEMENT	MANAGEMENT OBJECTIVES: To protect, maintain, and control viable, healthy, free-roaming herds of wild horses and their habitat.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	To provide appropriate numbers of wild horses to maintain viable, healthy herds in harmony and consistent with their resource management objectives and to provide the public the recreational opportunity for viewing wild horses.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: 5 wild horse herd areas would be maintained and planning area AMLs would range from 1,105 to 1,600 head.	4 wild horse herd areas would be maintained with AMLs ranging from 1,036 to 1,500 head.	Same as Alternative A.	Same as Preferred.
	Water developments would be provided, if necessary. Water developments in crucial winter ranges would be allowed if no adverse impacts occurred to the crucial winter range.	Water developments would not be provided for wild horses unless consistent with wildlife habitat needs.	New water developments would be provided. Controlled waters (i.e., wells) could be allowed in crucial winter range.	Same as Alternative B.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WILD HORSE MANAGEMENT (continued)	Wild horse herd management plans would be prepared and would be consistent with other resource management objectives. These activity plans would include assurance of adequate forage (AUMs) to support appropriate management levels in the herd units and that herds maintain appropriate age, sex, and color ratios. A monitoring program would be developed to provide information to support wild horse management decisions.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Specific objectives for wild horse herd management areas would be included in herd management plans. These would include consideration of desired plant communities, wildlife habitat, watershed, livestock grazing, and other resource needs.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Gathering plans would be prepared for excess horses from inside and outside wild horse herd management areas.	Same as Preferred.	Same as Preferred.	Same as Preferred.
WILDERNESS MANAGEMENT	MANAGEMENT OBJECTIVE: To manage wilderness study areas (225,000 acres) in accordance with the decisions of Congress. Until Congress acts, they would be managed under the "Interim Wilderness Management Policy and Guidelines for Lands Under Wilderness Review."	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WILDERNESS MANAGEMENT (continued)	MANAGEMENT ACTIONS: Wilderness management plans would be prepared for those areas designated by Congress.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	WSAs not designated as wilderness would be managed in accordance with the approved Green River RMP.	Same as Preferred.	Same as Preferred.	Same as Preferred.
WILDLIFE MANAGEMENT	MANAGEMENT OBJECTIVE: To maintain and enhance fish and wildlife resources and provide for biological diversity of plants and wildlife resources.	To maintain biological diversity of plants and wildlife species within habitat capabilities.	Same as Preferred.	Same as Preferred.
	To achieve a healthy and productive condition in wetland/riparian areas, and to apply "no net loss of wetlands" policy.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	To provide habitat for threatened, endangered, and sensitive plant and animal species.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: High value wildlife habitat would be maintained or improved.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	To the extent possible, suitable wildlife habitat and forage would be provided to support wildlife populations defined in the Wyoming Game and Fish Department 1989 Strategic Plan objectives. Accommodating changes to Wyoming Game and Fish Department planning objective levels would be considered and based on habitat capability and availability.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WILDLIFE MANAGEMENT (continued)	BLM would cooperate with the Wyoming Game and Fish Department in conducting studies for the introduction and reintroduction of native and non-native wildlife and fish species, within the planning area.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Management practices such as proper distance restrictions, seasonal restrictions, and rehabilitation standards for all wildlife and sensitive species habitats would be utilized where applicable to adequately protect wildlife species and their habitats.	Same as Preferred.	Same as Preferred	Same as Preferred.
	Big game crucial winter ranges and parturition areas, and sage grouse habitat would be subject to seasonal restrictions.	Same as Preferred.	Big game crucial winter ranges, parturition areas, and sage grouse habitat would not be subject to seasonal restrictions.	Same as Preferred.
	Livestock and wild horse water developments on crucial habitat could be considered when consistent with wildlife habitat needs.	Same as Preferred.	Livestock waters would be placed on crucial wildlife habitat.	Livestock waters could not be developed in crucial wildlife habitat unless it would benefit wildlife habitat.
	Establishing and maintaining special management purpose exclosures for important wildlife values would be considered on a case-by-case basis. Exclosures would be closed to livestock grazing.	Same as Preferred.	Same as Preferred.	Same as Preferred.



TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WILDLIFE MANAGEMENT (continued)	Animal damage control activities would be considered on a case by case basis. These activities are subject to established procedures and policies as outlined in the national and state level memoranda of understanding between BLM and USDA (APHIS).	Same as Preferred.	Same as Preferred.	Animal damage control practices would not be allowed.
	Habitat improvement plans and reclamation actions would be initiated in areas highly developed by mineral activity. Priority would be given to meeting objectives for wildlife habitat, watershed, and livestock forage needs.	Same as Preferred.	Habitat improvement plans and reclamation actions would be initiated on newly developed areas. Priority would be given primarily to livestock forage needs and secondarily to wildlife and watershed.	Same as Preferred.
SPECIAL MANAGEMENT AREAS				
<i>Candidate Plant Species</i>	MANAGEMENT OBJECTIVE: To prevent destruction or loss of candidate plant communities and important habitat, and to provide opportunities for enhancing or expanding habitat.	To protect the candidate plant species and their important habitats.	Same as Alternative A.	Same as Alternative A.
	MANAGEMENT ACTIONS: About 440 acres of known candidate plant species populations would be designated an ACEC.	No ACEC would be designated for candidate plant species.	Same as Alternative A.	31,340 acres would be designated an ACEC to protect known candidate plant species and their potential habitat areas.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Candidate Plant Species</i> (continued)	As additional candidate plant species and their essential habitat are located, more area would be added to the ACEC (there are about 31,340 acres of potential habitat). Nonessential habitat to support these plants would be dropped from further consideration for ACEC designation.	No similar action.	No similar action.	No similar action.
	Areas designated ACEC would be closed to oil and gas leasing.	Same as Preferred.	Areas designated as ACEC would be open to oil and gas leasing and development.	Same as Preferred.
	Areas designated as ACEC would be closed to mineral materials sales.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Areas designated as ACEC would be closed to the location of mining claims and mining activity (withdrawals would be pursued).	Areas designated as ACEC would be open to the location of mining claims and mining activity (no withdrawals would be pursued).	Same as Alternative A.	Same as Preferred.
	Areas designated as ACEC would be closed to off-road vehicular travel.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	On about 30,900 acres of potential habitat for candidate plant species, searches for candidate plants would be required and any needed avoidance and protection measures would be prescribed prior to authorizing implementation of any activities that would disturb or destroy vegetation.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Candidate Plant Species</i> (continued)	Candidate plant species population areas would be closed to any surface disturbing fire suppression activities. The use of fire suppression ground vehicles would be consistent with ORV designations.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Acquisition of approximately 1,900 acres of candidate plant species habitat would be pursued.	Acquisition would not be pursued.	Same as Alternative A.	Same as Preferred.
<i>Cedar Canyon ACEC</i>	MANAGEMENT OBJECTIVE: To provide protection and enhancement of important cultural, scenic, and wildlife habitat values.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<u>General Area</u>	MANAGEMENT ACTIONS: The existing Cedar Canyon ACEC designation (2,550 acres) would be retained.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The entire ACEC would be open to mineral leasing.	Same as Preferred.	Same as Preferred.	The entire ACEC would be open to fluid mineral leasing but closed to coal leasing.
	Big game seasonal restrictions would be applied to disruptive activities, as needed.	Same as Preferred.	Big game seasonal restrictions would not be applied to disruptive activities.	Same as Preferred.
	Highly erodible soils would be managed to maintain or reduce erosions levels and improve vegetation cover.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Engineering design would be required for surface disturbing activities proposed on slopes > 25%.	Engineering design would be required for activities proposed on slopes > 12%.	Same as Preferred.	Same as Alternative A.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>General Area</u> (continued)	<p>The ACEC would be closed to over-the-snow vehicle use.</p> <p>The ACEC would be managed for Class II visual values and facilities would be designed to blend with the landscape.</p> <p>A reclamation plan would be prepared to restore productivity of disturbed wildlife habitat.</p>	<p>The ACEC would be open to over-the-snow vehicle use.</p> <p>Same as Preferred.</p> <p>No similar action.</p>	<p>Same as Alternative A.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p>	<p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>No net gain of disturbed acreage would be achieved which could result in preparation of reclamation plans.</p>
<u>Rock Art Site</u>	<p>The rock art (petroglyph) site, plus the surrounding area within a 1/2 mile radius (about 500 acres), would be closed to all surface disturbing activities. The following requirements would be applied in this 500-acre area:</p> <ul style="list-style-type: none"> <li>-an NSO requirement would be applied to oil and gas leasing.</li> <li>-the area would be closed to location of mining claims (a withdrawal would be pursued).</li> <li>-the area would be closed to mineral material sales.</li> <li>-the area would be closed to off-road vehicular travel.</li> <li>-the area would be closed to explosives blasting and vibroseis operations.</li> <li>-the area would be closed to use of fire retardant chemicals containing dyes.</li> </ul>	<p>The rock art site (about 20 acres) would be closed to all surface disturbing activities. The following requirements would be applied in this 20-acre area:</p> <ul style="list-style-type: none"> <li>-same as Preferred.</li> <li>-no similar action.</li> <li>-same as Preferred.</li> <li>-same as Preferred.</li> <li>-same as Preferred.</li> <li>-same as Preferred.</li> <li>-same as Preferred.</li> </ul>	<p>Same as Alternative A.</p> <ul style="list-style-type: none"> <li>-same as Preferred.</li> <li>-same as Alternative A.</li> <li>-same as Alternative A.</li> <li>-same as Alternative A.</li> <li>-same as Alternative A.</li> <li>-same as Alternative A.</li> <li>-same as Alternative A.</li> </ul>	<p>Same as Preferred.</p> <ul style="list-style-type: none"> <li>-same as Preferred.</li> <li>-same as Preferred.</li> <li>-same as Preferred.</li> <li>-same as Preferred.</li> <li>-same as Preferred.</li> <li>-same as Preferred.</li> <li>-same as Preferred.</li> </ul>

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Rock Art Site</u> (continued)	-the area would be closed to surface mining for coal and to placement or construction of any mining related surface facilities.	-same as Preferred.	-same as Alternative A.	-the area would be closed to all coal leasing, development, and related activities.
<u>Remainder of ACEC</u> <u>(about 2,050 acres)</u>	The area (about 2,050 acres) would be managed as an avoidance area for surface disturbing activities. Intensive mitigation would be required to protect ACEC values if the area could not be avoided.	The area (about 2,530 acres) would be open for surface disturbing activities with constraints to protect ACEC values if the area could not be avoided.	Same as Alternative A.	Same as Preferred.
	The area would be open to the location of mining claims and mineral material sales.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The area would be open to coal leasing and development by subsurface mining methods only. Very limited placement of surface facilities would be considered.	About 2,270 acres would be open to coal leasing and development by subsurface mining methods only. Very limited placement of surface facilities would be considered on these lands.	The area would be open to coal leasing and development by any mining method, provided scenic, wildlife, and watershed conflicts could be mitigated.	The area would be closed to coal leasing, development, and related activities.
	-no similar action.	-about 260 acres would be closed to the placement of surface facilities.	-no similar action.	-no similar action.
	Vehicular travel would be limited to designated roads and trails.	Vehicular travel would be limited to existing roads and trails.	Same as Alternative A.	Same as Preferred.
	-seasonal vehicular travel restrictions would be applied, as necessary, to protect raptor nesting, sage grouse mating and nesting, and big game wintering and birthing areas.	-same as Preferred.	-seasonal vehicular travel restrictions would be applied to protect nesting raptors only.	-same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Greater Sand Dunes ACEC</i>	MANAGEMENT OBJECTIVE: To preserve and protect the integrity of the unique resource values in the area including the Sand Dunes, Boar's Tusk, and wildlife habitat.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<u>General Area</u>	MANAGEMENT ACTIONS: The existing Greater Sand Dunes ACEC designation (41,640 acres) would be retained.	Same as Preferred.	The Greater Sand Dunes ACEC would be reduced to 25,050 acres.	Same as Preferred.
	Surface disturbing activities would require a paleontological clearance in specific areas.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Surface disturbing activities would be managed to avoid recreation sites.	Surface disturbing activities would be managed to avoid the area within 1/2 mile of recreation sites.	Surface disturbing activities would be allowed within the vicinity of recreation sites.	Surface disturbing activities would be managed to avoid recreation sites and the area within a 1-mile radius.
	The ACEC, and the area within one mile or the visual horizon (whichever is closer) of the ACEC, would be managed as an avoidance area for rights-of-way, particularly large powerlines.	Same as Preferred.	The ACEC, and the area within 1/2 mile or the visual horizon (whichever is closer) of the ACEC, would be an avoidance area for rights-of-way, particularly large powerlines.	Same as Preferred.
	The entire ACEC would be closed to mineral material sales.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	About 25,250 acres in the ACEC would be closed to mineral location (withdrawals would be pursued).	Same as Preferred.	Same as Preferred.	The entire ACEC (41,640 acres) would be closed to mineral location (withdrawals would be pursued).
	Livestock grazing would continue in the ACEC.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>General Area</u> (continued)	Wild horse management in the ACEC would be consistent with wild horse plans and ACEC objectives. No horse traps would be built in the ACEC.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Wildlife habitat improvement projects would be developed in the ACEC, as necessary.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Native vegetation would be maintained and protected.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The ACEC would be managed for a variety of recreation uses.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Two roads in the ACEC would be designated as part of the Tri-Territory Backcountry Byway.	No roads would be designated as part of the Tri-Territory Backcountry Byway.	Same as Preferred.	Same as Preferred.
	The ACEC would be managed for Class II VRM values. All facilities and structures placed or constructed in the area would be designed and located to blend with the natural landscape.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<u>Western Portion</u> <u>(25,250 acres)</u>	This portion of the ACEC would be closed to oil and gas leasing and development and to geophysical exploration activities.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	About 4,360 acres of this area, that is within the coal development potential area, would be closed to consideration for Federal coal leasing and development.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The entire area would be closed to off-road vehicular use.	Same as Preferred.	Same as Preferred.	Same as Preferred.



TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Western Portion</u> <u>(25,250 acres)</u> (continued)	To improve manageability of the ACEC, acquisition of about 1,920 acres within this area would be pursued.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<u>Eastern Portion</u>	About 16,390 acres would be open to:	Same as Preferred.	Same as Preferred.	Same as Preferred.
	-oil and gas leasing;	-same as Preferred.	-same as Preferred.	-same as Preferred.
	-to further development on stabilized and non-stabilized sand areas;	-to further development on stabilized dunes within 10,390 acres;	Same as Preferred.	-to further development on non-stabilized dunes only;
	-to additional wells, up to three per section in the existing developed area (6,000 acres), and one well per section on undeveloped areas (10,390 acres);	-to additional wells up to three wells per section (6,000 acres);	-to additional wells up to four wells per section;	-same as Preferred.
	-to geophysical activities.	-same as Preferred.	-same as Preferred.	-same as Preferred.
	Developments would be designed to allow continued access to recreation sites.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Management activities would be designed and located to blend with the natural landscape.	Same as Preferred.	The ACEC would be managed for Class II visual values in portions of the area and Class III visual values where activities would be designed to partially blend with the landscape in the developing oil and gas field area.	Same as Preferred.
	About 9,840 acres would be closed to surface mining and any surface facilities.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Eastern Portion</u> (continued)	Seasonal restrictions would be applied to protect big game.	Same as Preferred.	Seasonal restrictions would not be applied to protect big game.	Same as Preferred.
	Surface and groundwater would be protected. Ponds would not be utilized as water sources for development activities.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Pipelines crossing stabilized dunes would be placed on the surface.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Abandoned facilities would be removed.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	About 10,390 acres of unstabilized dunes would be designated open to off-road vehicular travel.	Same as Preferred.	About 5,390 acres of unstabilized dunes would be open to off-road vehicular travel.	Same as Preferred.
	About 6,000 acres of stabilized dunes would be designated as limited to existing roads and trails for off-road vehicular travel.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<u>Crookston Ranch and Boar's Tusk Portion</u>	The values of Crookston Ranch and Boar's Tusk would be preserved.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Crookston Ranch and Boar's Tusk (about 130 acres) would be:	The area within 1/2 mile of Boar's Tusk and of Crookston Ranch (about 590 acres) would be:	Same as Preferred.	Same as Alternative A.
	-closed to surface disturbing activities.	-same as Preferred.	-same as Preferred.	-same as Preferred.
	-closed to mineral material sales.	-same as Preferred.	-same as Preferred.	-same as Preferred.
	-closed to the use of explosives and blasting.	-same as Preferred.	-same as Preferred.	-same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Crookston Ranch and Boar's Tusk Portion</u> (continued)	-closed to surface coal mining activities and facilities but open for subsurface mining.	-same as Preferred.	-same as Preferred.	-closed to further consideration for coal leasing.
	-open to activities designed to meet management objectives of the sites.	-same as Preferred.	-same as Preferred.	-same as Alternative A.
	The area within 1/2 mile of Boar's Tusk (about 500 acres) would be closed to blasting and explosive charges.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Vehicular travel would be limited to designated roads and trails. However the road around Boar's Tusk would be closed.	Vehicular travel would be limited to existing roads and trails. However the road around Boar's Tusk would be closed.	Vehicular travel would be limited to existing roads and trails. The road around Boar's Tusk would be open.	Same as Preferred.
	Maximum fire suppression activity would be used to protect the standing structures at Crookston Ranch.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<u>Monument Valley Area</u>	MANAGEMENT OBJECTIVE: To manage the area for multiple use values and provide protection for wildlife, geologic, raptor, cultural, watershed, scenic and scientific values.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: The area (64,300 acres) would not be designated an ACEC.	Same as Preferred.	Same as Preferred.	The area (64,300 acres) would be designated an ACEC.
	The area would be open to mineral location and the oil shale withdrawal would be revoked.	The area would be closed to mineral location and the oil shale withdrawal would not be revoked.	Same as Preferred.	The area would be closed to mineral location, the oil shale withdrawal revoked, and other appropriate withdrawals would be pursued.
	The area would be open to consideration for mineral leasing.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Monument Valley Area</i> (continued)	The area would be open to consideration for mineral material sales.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Cultural resource surveys would be required prior to conducting surface disturbing activities.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	A search for paleontological resources would be required prior to conducting surface disturbing or excavation activities.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Slopes > 25% and areas with highly erosive soils would be avoidance areas for surface disturbing activities.	Same as Preferred.	Same as Preferred.	Slopes > 20% and highly erosive soils would be closed to surface disturbing activities.
	Vehicular travel would be limited to designated roads and trails.	Vehicular travel would be limited to existing roads and trails.	Same as Alternative A.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Monument Valley Area</i> (continued)	The area would be managed under a Class II visual resource classification and activities would be located and designed to blend with the landscape.	About 54,200 acres of the area would be managed for Class II visual resource classification where activities would be located and designed to blend with the landscape. About 10,200 acres of the area would be managed under a Class IV visual resource classification where activities could cause major modification to the landscape.	About 54,200 acres of the area would be managed for Class III visual resource classification where activities would be located and designed to partially retain the existing character of the landscape. About 10,200 acres of the area would be managed under a Class IV visual resource classification where activities could cause major modification to the landscape. The area would be managed for Class III visual values where activities would be designed to partially retain the existing character of the landscape (54,200 acres) and for Class IV visual values where activities could cause major modification to the landscape on 10,200 acres.	Same as Preferred.
	Livestock grazing and wild horse use would continue.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Natural Corrals ACEC</i>	MANAGEMENT OBJECTIVE: To protect and enhance cultural, historical, recreation, and geologic values within the ACEC.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: The Natural Corrals ACEC (1,276 acres) designation would be retained.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The entire area would be open to consideration for oil and gas leasing.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Natural Corals ACEC</i> (continued)	The entire area would be closed to surface disturbing activities.	Same as Preferred.	640 acres would be closed to surface disturbing activities.	Same as Preferred.
	The entire area would be closed to surface coal mining and any related surface operations and impacts.	1,116 acres would be closed to surface coal mining and any related facilities.	640 acres would be closed to surface coal mining and related surface operations and impacts.	Same as Preferred.
	357 acres would be closed to mineral location and the existing withdrawal would be retained.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	1,115 acres would be closed to mineral material sales.	Same as Preferred.	640 acres would be closed to mineral material sales.	Same as Preferred.
	15 acres would be closed to all geophysical activities.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	1/2 mile of road and 20 acres would be closed to vehicular travel. The remainder of the area would be limited to designated roads and trails.	1/2 mile of road and 20 acres would be closed to vehicular travel. The remainder of the area would be limited to existing roads and trails.	Same as Alternative A.	Same as Alternative A.
	The area would be open for activities such as interpretive facilities, fencing, etc. that would increase public awareness of the area and ensure protection of resources.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The area would be managed under a Class II visual resource classification and activities would be located and designed to blend with the landscape.	The area would be managed under a Class IV visual resource classification where activities could cause major modification to the landscape.	Same as Alternative A.	Same as Alternative A.
	Livestock grazing and wild horse use would continue.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Oregon Buttes ACEC</i>	MANAGEMENT OBJECTIVE: To protect and enhance the scenic integrity of the area as a historic landscape and to protect wildlife values.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: The existing ACEC (3,450 acres) designation would be retained.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The area would be closed to: all surface disturbing activities; mineral material sales; and off-road vehicular travel.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The area would be open to activities designed to meet management objectives for the area.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The area would be managed under a Class II visual resource classification and activities would be located and designed to blend with the landscape.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Pine Springs ACEC</i>	MANAGEMENT OBJECTIVE: To enhance and protect cultural, historic, and prehistoric resource values in the area.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: The existing 90-acre ACEC would be expanded to 6,030 acres.	The existing 90-acre ACEC designation would be retained.	Same as Alternative A.	Same as Preferred.
	The area (6,030 acres) would be: closed to surface disturbing activities.	The area (90 acres) would be: closed to surface disturbing activities.	Same as Alternative A.	Same as Preferred.
	-closed to mineral material sales.	-same as Preferred.	-same as Preferred.	-same as Preferred.
	-closed to mineral location.	-same as Preferred	-same as Alternative A.	-same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Pine Springs ACEC</i> (continued)	-closed to off-road vehicular travel.	-same as Preferred.	-same as Preferred.	-same as Preferred.
	-open to activities that would meet management objectives for the area and to maintenance for existing spring developments.	-same as Preferred.	-same as Preferred.	-same as Preferred.
	-managed under a Class III visual resource classification and activities would be located and designed to partially retain the character of the landscape.	Same as Preferred.	Same as Preferred.	-managed under a Class II visual resource classification and activities would be designed and located to blend into the natural landscape.
	The existing Pine Springs site (90 acres) would be closed to all geophysical activities, and use of explosives.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Red Desert Watershed Area</i>	MANAGEMENT OBJECTIVE: To continue to manage for multiple uses in the Red Desert area.	Same as Preferred.	To continue to manage for multiple use in the Red Desert area with emphasis on commodity production.	To continue to manage for multiple use in the Red Desert area with emphasis on visual resources, watershed values, and wildlife resources.
	MANAGEMENT ACTIONS: The Red Desert Watershed area would be considered the portion of the Great Divide Basin north of the checkerboard in the Green River planning area (341,060 acres).	The Red Desert Watershed area would be considered the entire Great Divide Basin within the Green River planning area (481,930 acres).	Same as Alternative A.	Same as Preferred.
	Developments and land use activities would conform with the concepts of open space.	Same as Preferred.	No similar action.	Same as Preferred.
	Objectives and actions prescribed for all land and resource values and uses in this alternative would apply as appropriate.	Objectives and actions prescribed for all land and resource values and uses in this alternative would apply as appropriate.	Objectives and actions prescribed for all land and resource values and uses in this alternative would apply as appropriate.	Objectives and actions prescribed for all land and resource values and uses in this alternative would apply as appropriate.



TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Red Desert Watershed Area</i> (continued)	About 2,500 acres would be closed to surface disturbing activities to protect candidate plant species and ACEC values.	Same as Preferred.	Same as Preferred.	About 46,000 acres would be closed to surface disturbing activities to protect candidate plant sites, ACEC values, and the South Pass Historic Landscape.
	About 2,860 acres would be open to consideration for coal leasing and development.	About 46,735 acres would be considered for coal leasing and development.	Same as Alternative A.	Same as Preferred.
	About 7,760 acres would be closed to mineral material sales and mineral location to protect candidate plant species, ACEC values, and the South Pass Historic Landmark. Withdrawals from mineral location would be pursued.	About 2,500 acres would be closed to mineral material sales to protect candidate plant species and ACEC values. Withdrawals from mineral location would be pursued.	Same as Alternative A.	Same as Preferred.
	An east-west right-of-way window would be identified as the preferred route for rights-of-way.	A preferred right-of-way route and window would not be identified.	Same as Alternative A.	Same as Alternative A.
<i>South Pass Historic Landscape</i>	Overhead powerlines would not be allowed in the area.	Overhead powerlines would be allowed in the area.	Same as Alternative A.	Same as Preferred.
	MANAGEMENT OBJECTIVE: To protect and maintain the visual and historical integrity of the historic trails and surrounding viewscape in the South Pass area.	To protect the visual and historic integrity of the historic trails and adjacent geographic features.	Same as Alternative A.	Same as Alternative A.
	MANAGEMENT ACTIONS: The South Pass Historic Landscape area (54,840 acres) would be designated an ACEC.	The South Pass Historic Landscape area (87,540 acres) would not be designated an ACEC.	Same as Alternative A.	The South Pass Historic Landscape area (87,540 acres) would be designated an ACEC.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>South Pass Historic Landscape</i> (continued)	The areas visible from the historic trails in the area (about 33,000 acres) would be closed to surface disturbing activities.	Areas within 1/4 mile or the visual horizon, whichever is closer, of historic trails would be avoidance areas for surface disturbing activities.	Same as Alternative A.	The area surrounding the trails would be closed to surface disturbing activities.
	About 21,840 acres along the trails, that are visibly shielded by topography, would be open to surface disturbing activities provided the visual integrity of the area would be maintained.	About 46,140 acres would be open to surface disturbing activities provided, the visual integrity of the area would be maintained.	Same as Alternative A.	The entire proposed ACEC (87,540 acres) would be closed to surface disturbing activities.
	No similar action.	41,400 acres in the southern portion of the area would be closed to surface disturbing activities.	Same as Alternative A.	The entire proposed ACEC (87,540 acres) would be closed to surface disturbing activities.
	The existing Oregon Buttes ACEC designation would be retained.	Same as Preferred.	Same as Preferred.	The existing Oregon Buttes ACEC would become a part of the South Pass Historic Landscape ACEC.
	Vehicular travel would be limited to designated roads and trails on 33,000 acres and to existing roads and trails on 21,840 acres.	Vehicular travel would be limited to existing roads and trails on 46,140 acres and 41,400 acres would be closed to vehicular travel.	Same as Alternative A.	Vehicle travel would be limited to designated roads and trails on 46,140 acres and 41,400 acres would be closed to vehicular travel.
	The South Pass Historic Landmark (about 5,260 acres) would be: -closed to surface disturbing activities.	The South Pass Historic Landmark (about 5,260 acres) would be: -an avoidance area for surface disturbing activities.	Same as Alternative A.	Same as Preferred.
	-closed to mineral location and a withdrawal would be pursued.	-open to mineral location.	-same as Alternative A.	-same as Preferred.
	-limited to designated roads and trails for off-road vehicular travel.	-limited to existing roads and trails for off-road vehicular travel.	-same as Alternative A.	-same as Preferred.

RESOURCE

TABLE 2-1 (continued)

	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Steamboat Mountain Area</i>	MANAGEMENT OBJECTIVE: To provide suitable habitat to maintain the Steamboat elk herd.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: The Steamboat Mountain area (43,010 acres) would be designated an ACEC.	The Steamboat Mountain area would not be designated an ACEC.	Same as Alternative A.	Same as Preferred.
	Oil and gas leasing would be withheld in the entire area pending further study to determine leasing and development suitability. Upon completion of the plan, areas may be offered for lease or withheld from leasing entirely.	Oil and gas leasing would continue provided that plans of development assure that the elk herd would not be adversely affected.	Same as Alternative A.	Oil and gas leasing would continue with a requirement that no surface disturbing activities would be allowed.
	A plan of operations would be developed to ensure no unnecessary or undue degradation would occur from locatable mineral activity. A protective withdrawal may be pursued if necessary to protect crucial habitat.	Same as Preferred.	Same as Preferred.	The area would be closed to mineral location and a withdrawal would be pursued.
	The area would be open to consideration for coal leasing and development by subsurface mining methods. Related surface operations and impacts would only be if they conform with the management objectives for the proposed ACEC.	The area would be closed to coal leasing and development.	The area would be open to consideration for coal leasing and development by any mining method provided that the elk herd would not be adversely affected.	Same as Alternative A.
	The area would be closed to mineral material sales until the study on oil and gas leasing suitability is completed.	Mineral material sales would be allowed provided that the elk herd would not be adversely affected.	Same as Alternative A.	The area would be closed to mineral material sales.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Steamboat Mountain Area</i> (continued)	The area would be managed as an avoidance area for rights-of-way. Intensive mitigation would be required to ensure that the elk herd would not be adversely affected, if the area could not be avoided.	Linear rights-of-way would be allowed provided that the elk herd would not be adversely affected.	Same as Alternative A.	Same as Preferred.
	Seasonal restrictions would be applied to land and resource uses, as needed, to protect wintering wildlife.	Same as Preferred.	Seasonal restrictions would not be applied to land and resource uses.	Same as Preferred.
	The entire area would be managed under Class II visual resource classification.	The entire area would be managed under Class III visual resource classification.	Same as Alternative A.	Same as Preferred.
	Vehicular travel would be limited to designated roads and trails. Seasonal closures may be implemented to protect wintering wildlife.	Vehicular travel would be limited to existing roads and trails. Seasonal closures may be implemented to protect wintering wildlife.	Vehicular travel would be limited to existing roads and trails. No seasonal closures would be implemented.	Same as Preferred.
	Vegetation management would be designed to maintain, preserve, or enhance big game cover and forage requirements.	Vegetation management would be designed to maintain big game cover and forage requirements.	Same as Alternative A.	Same as Preferred.
	About 30,000 acres of overlapping big game crucial winter range and parturition areas adjacent to the proposed ACEC would be managed to allow progressive development of one or two areas at a time.	Same as Preferred.	No similar action.	Same as Preferred.
<i>Tri-State Monument Area</i>	MANAGEMENT OBJECTIVE: To improve or enhance watershed values and Colorado River cutthroat trout habitat.	The Tri-State area would be managed for watershed values and for Colorado River Cutthroat Trout habitat.	Same as Preferred.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Tri-State Monument Area</i> (continued)	MANAGEMENT ACTIONS: The Tri-State Monument area (131,780 acres) consisting of the Currant Creek, Sage Creek, and Red Creek watersheds, would be designated an ACEC. This designation would encompass and supersede the existing Red Creek ACEC designation.	The Tri-State Monument area would not be designated an ACEC. However, the existing Red Creek ACEC designation would be retained.	Same as Alternative A.	The Tri-State Monument area (293,220 acres) consisting of the Currant Creek, Sage Creek, and Red Creek watersheds, (including the existing Red Creek ACEC designation) and Pine and Little Mountains would be designated an ACEC.
<u>General Area</u>	Most of the area would be open to mineral leasing and activities with appropriate restrictions applied as needed to protect other resource values.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The area would be open to consideration for coal leasing and development by subsurface mining methods. Related surface operations and impacts would only be if they conform with the management objectives for the proposed ACEC.	The area would be closed to coal leasing and development.	The area would be open to consideration for coal leasing and development by any mining method.	Same as Alternative A.
	Livestock grazing objectives would be re-evaluated and, where necessary adjusted to meet watershed, water quality, and riparian objectives.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Timber harvest levels and practices would be adjusted to meet the area management objectives.	Existing timber harvest levels and practices would be continued.	Same as Preferred.	Same as Preferred.
	Coordinate with the Wyoming Game and Fish Department in monitoring needed control of big game at current or reduced numbers until the watershed recovers.	No similar action.	No similar action.	Same as Preferred.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>General Area</u> (continued)	Native species such as the Colorado River Cutthroat Trout would be reintroduced in the area.	No similar action.	No similar action.	Same as Preferred.
	Vegetation treatments would be designed to conform with watershed, wildlife, and fisheries management objectives.	Vegetation treatments would be designed to conform with livestock grazing, watershed, wildlife, livestock grazing and fisheries management objectives.	Same as Alternative A.	Same as Preferred.
	Vehicular travel would be limited to designated roads and trails. Transportation planning would identify designed travel routes.	Vehicular travel would be limited to existing roads and trails.	Same as Alternative A.	Same as Preferred.
<u>Current Creek Portion</u>	The Current Creek drainage (23,740 acres) would be:	The Current Creek drainage (23,740 acres) would be:	The Current Creek drainage (23,740 acres) would be:	The Current Creek drainage (23,740 acres) would be:
	-closed to surface disturbing activities.	-same as Preferred.	- managed as an avoidance area for surface disturbing activities. Activities could occur provided a plan to mitigate impacts to the Colorado River cutthroat trout could be developed.	-same as Preferred.
	-closed to mineral material sales.	-no similar action.	-no similar action.	-Same as Preferred.
	-closed to mineral location and withdrawals would be pursued.	-open to mineral location.	-Same as Alternative A.	-Same as Preferred.
	Powerlines would be allowed to span the northern corner of the drainage provided area objectives could be met.	No similar action.	No similar action.	-to mineral leasing. No similar action.

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Current Creek Portion</u> (continued)	<p>The drainage would be open to activities that would facilitate management of the area (i.e., fencing, signs, barriers, stream structures, etc.).</p> <p>Vehicular travel would be limited to designated roads and trails. Transportation planning would include proper road location, construction, reconstruction, design, and reclamation.</p> <p>Acquisitions to enhance management of the Colorado River Cutthroat Trout be considered.</p>	<p>Same as Preferred.</p> <p>Vehicular travel would be limited to existing roads and trails.</p> <p>No similar action.</p>	<p>Same as Preferred.</p> <p>Same as Alternative A.</p> <p>No similar action.</p>	<p>Same as Preferred.</p> <p>Off-road vehicle travel would be limited to designated roads and trails.</p> <p>Same as Preferred.</p>
<u>Red Creek Portion</u>	<p>50,120 acres would be closed to:</p> <ul style="list-style-type: none"> <li>-mineral leasing</li> <li>-mineral material sales</li> <li>-mineral location (withdrawals would be pursued)</li> <li>-surface disturbing activities.</li> </ul> <p>The existing right-of-way concentration area would be closed to new rights-of-way. An alternate route for rights-of-way would be established along Highway 430.</p>	<p>50,120 acres would be open to:</p> <ul style="list-style-type: none"> <li>-mineral leasing</li> <li>-mineral material sales</li> <li>-mineral location</li> <li>-surface disturbing activities with a requirement to submit mitigation plans for mitigating impacts to watershed, water quality, wildlife, scenic, and fisheries values.</li> </ul> <p>No similar action.</p>	<p>Same as Alternative A.</p> <p>No similar action.</p>	<p>55,880 acres would be closed to:</p> <ul style="list-style-type: none"> <li>-mineral leasing</li> <li>-mineral material sales</li> <li>-mineral location (withdrawals would be pursued)</li> <li>-surface disturbing activities.</li> </ul> <p>Same as Preferred.</p>

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Red Creek Portion</u> (continued)	Vehicular travel would be limited to designated roads and trails.	Vehicular travel would be limited to existing roads and trails.	Same as Alternative A.	The area would be closed to off-road vehicular travel except for the main county road through Richards Gap and the Red Creek Ranch road, and trails in the area would be closed.
	The area would be open to activities that would meet the management objectives for the area (i.e., fencing, interpretive signs, barriers or sediment structures, etc.).	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>White Mountain Petroglyphs ACEC</i>	MANAGEMENT OBJECTIVE: To protect cultural resource values from degradation and provide for wildlife and scenic values, and Native American concerns.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: The existing White Mountain ACEC (20 acres) designation would be retained.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The entire area would be open to mineral leasing.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The entire area would be closed to:	Same as Preferred.	Same as Preferred.	Same as Preferred.
	-surface disturbing activities.			
	-mineral material sales.			
	-mineral location (the existing withdrawal would be retained).			
	The entire area would be closed to off-road vehicular travel.	Vehicular travel would be limited to existing roads and trails.	Same as Alternative A.	Same as Preferred.
	The entire area would be closed to the use of explosives.	No similar action.	No similar action.	Same as Preferred.



TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>White Mountain Petroglyphs ACEC</i> (continued)	The entire area would be closed to the use of fire retardant chemicals containing dyes.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The ACEC would be managed under a Class III visual resource classification.	The ACEC would be managed under a Class IV visual resource classification.	Same as Alternative A.	Same as Preferred.
	The 1/2 mile area surrounding the ACEC would be closed to:	No similar action.	No similar action.	Same as Preferred.
	-surface disturbing activities.			
	-mineral material sales.			
<i>Wild and Scenic Rivers</i>	-the use of explosives and blasting.			
	The area within 300' of the petroglyphs would be closed to vibroseis activity.	No similar action.	No similar action.	Same as Preferred.
	Vehicular travel would be limited to designated roads and trails.	No similar action.	No similar action.	Same as Preferred.
	MANAGEMENT OBJECTIVE: To identify waterways that are suitable for inclusion in the wild and scenic river system and to manage them for the protection of their outstandingly remarkable values until Congress considers them for designation.	No waterways of waterway segments across BLM administered public lands would be identified for consideration for inclusion in the National Wild and Scenic Rivers System. Such areas would be managed for their inherent resource values in accordance with the appropriate provisions of the existing land use plans covering the Green River planning area.	Same as Preferred.	Same as Preferred.
	7 segments of the Sweetwater River flowing through parcels of BLM administered public lands (totaling 9.7 miles), were found to be suitable for further consideration for inclusion in the Wild and Scenic Rivers System.			

TABLE 2-1 (continued)

RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Wild and Scenic Rivers</i> (continued)	The interim management prescriptions for these lands is summarized below.	Management prescriptions are summarized below.	Same as Preferred.	Same as Preferred.
	MANAGEMENT ACTIONS: Wild segments (7.3 miles) would be managed to retain their pristine and rugged characteristics. Activities that could alter these values would not be allowed.	Activities would be allowed within the parameters of the watershed/water quality, recreation, and riparian management objectives for the area.	Same as Preferred.	Same as Preferred.
	Scenic segments (3.3 miles) would be managed to retain their outstanding scenic characteristics. Activities that are not evident or that are short-lived and would not adversely affect the scenic values would be considered on a case-by-case basis.	Activities would be designed to retain the existing character of the landscape.	Same as Preferred.	Same as Preferred.
	0.6 miles would be managed to retain the outstanding recreational values. Intrusions that would not adversely affect the recreational values and uses would be considered on a case-by-case basis.	Recreational uses could occur provided watershed/water quality, recreation, and riparian resources for the area would not be adversely affected.	Same as Preferred.	Same as Preferred.

TABLE 2-2

## SUMMARY COMPARISON OF IMPACTS

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
AIR QUALITY	<p>Adverse impacts to users could occur because of restricted location for placement of facilities in order to meet air quality standards.</p> <p>Surface mining, construction activity, road use, facility emissions, prescribed fire, and wildfire would adversely affect air quality less than under Alternative A, but the additional acreage under prescribed burns would increase impacts from generated smoke.</p>	<p>Same as Preferred.</p> <p>Surface mining, construction activity, road use, facility emissions, prescribed fire, and wildfire would adversely affect air quality slightly higher than the Preferred Alternative. The acreage treated under prescribed burns would result in a short-term affect from generated smoke.</p>	<p>Same as Preferred.</p> <p>Surface mining, construction activity, road use, facility emissions, prescribed fire, and wildfire would adversely affect air quality more than under Alternative A; however, air quality standards would still be met.</p>	<p>Same as Preferred.</p> <p>Same as Preferred.</p>
CANDIDATE PLANTS	<p>Candidate plants would benefit from search and avoidance measures being applied to 39,320 acres; 440 acres being closed to oil and gas leasing; 3,110 acres would be closed to surface disturbing activities and would be closed to mineral material sales, mineral entry, and realty actions; and acquisition of approximately 1,900 acres of habitat.</p> <p>Activity on existing mining claims, livestock and wild horse concentrations, weed control, and unauthorized ORV use may adversely impact candidate plants.</p>	<p>Candidate plants would benefit from 39,320 acres set aside for avoidance or no surface occupancy; 3,110 acres closed to oil and gas leasing; 3,110 acres closed to surface disturbing activity, mineral material sales, and realty action.</p> <p>Same as Preferred.</p>	<p>Candidate plants would benefit from 3,110 acres set aside for avoidance and no surface occupancy; and 39,320 acres with surface disturbance restrictions. No lands would be acquired.</p> <p>Same as Preferred.</p>	<p>Candidate plants would benefit from 36,550 acres set aside for avoidance and no surface occupancy; 3,110 acres closed to oil and gas leasing, and withdrawn from other mineral or ROW activity to protect known plant habitat, and acquisition of approximately 1,900 acres of plant habitat.</p> <p>Same as Preferred.</p>

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
CULTURAL RESOURCES	<p>Cultural resources would benefit by 299,740 acres set aside for avoidance and no surface occupancy; 1,228,080 acres with surface disturbance restrictions; 337,510 acres closed to oil and gas leasing; and 6,735 additional acres withdrawn for cultural/historical sites and landmarks.</p> <p>Potential impacts to approximately 120 cultural resources would result from surface disturbing activities.</p> <p>Targeted management efforts within cultural resource management plans would benefit and enhance cultural resources on 15 trails and 12 sites.</p> <p>Management of the Steamboat-Sand Dunes area and the Boars Tusk as for geological and ecological features would be beneficial for cultural and historical concerns.</p> <p>Acquisition of Fort LaCiede would be beneficial to the BLM's cultural resource management efforts.</p>	<p>Cultural resources would benefit by 168,410 acres set aside for avoidance and no surface occupancy; 1,097,640 acres with surface disturbance restrictions; 264,770 acres closed to oil and gas leasing; and 160 additional acres withdrawn for a cultural site.</p> <p>Potential impacts to approximately 150 cultural resources would result from surface disturbing activities.</p> <p>Same as Preferred.</p> <p>Failure to manage the Steamboat-Sand Dunes area and the Boars Tusk as for geological and ecological features would result in a loss of cultural and historical values.</p> <p>Same as Preferred.</p>	<p>Cultural resources would benefit by 33,132 acres set aside for avoidance and no surface occupancy; 870,230 acres with surface disturbance restrictions; and 243,940 acres closed to oil and gas leasing.</p> <p>Potential impacts to approximately 300 cultural resources would result from increased surface disturbing activities.</p> <p>Same as Preferred.</p> <p>Same as Alternative A.</p> <p>Same as Alternative A.</p>	<p>Cultural resources would benefit by 665,490 acres set aside for avoidance and no surface occupancy; 1,261,000 acres with surface disturbance restrictions; 424,660 acres closed to oil and gas leasing; and 6,735 additional acres withdrawn for cultural and historical sites.</p> <p>Potential impacts to approximately 100 cultural resources would result from increased surface disturbing activities.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Alternative A.</p>

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
FIRE	Impacts would occur from additional costs over Alternative A for wildfire suppression and prescribed fire, accrued from restrictions imposed by other resource management requirements.	Impacts would occur from costs for wildfire suppression and prescribed fire, accrued from restrictions imposed by other resource management requirements.	Benefits would occur from costs reduced from Alternative A for wildfire suppression and prescribed fire activity, due to fewer imposed restrictions.	Impacts would occur from additional costs, over Alternative A, for wildfire suppression and prescribed fire, accrued from restrictions imposed by other resource management requirements.
FORESTRY	All forested lands would be placed in a restricted management category and would result in 55% reduction in volume output. Roughly 60% (4,670 acres) would be subject to operational and/or seasonal restrictions. The limitations on forest management would increase amount of raw material available to wood producers, decrease economic return to the government, and result in an increase in forest insect and disease activity.	All forest lands would be placed in a restricted management category, would result in a 1 to 55% reduction in volume output. Roughly 55% (4,367 acres) would be subject to operational and/or seasonal restrictions. Level of impact would vary with the actual volume output. Impacts associated with a 1% output reduction would be negligible. Impacts with a 55% reduction would be similar to the Preferred Alternative.	All forested lands would be placed in an intensive management category. Volume output would be reduced by roughly 1%. There would be no operational/seasonal restrictions except a livewater buffer. Impacts to forest management would be minimal.	All forested lands would be placed in a category designed to enhance or maintain other resource values. There would be no specific annual timber sale output. Timber harvesting would only be allowed when it would specifically and emphatically benefit other resource values. Wood producers could not rely on forested lands in planning area for source of material. Forest stand conditions would decline. Forest insect and disease level would increase. Economic return to the government would be negligible.
HAZARDOUS MATERIALS	Immediate attention to spills and unauthorized dumping and to inspections of produced water pits and drilling fluids would protect the environment and the public from contact with hazardous materials.	Same as Preferred.	Same as Preferred.	Same as Preferred.
LANDS	The addition of two new rights-of-way windows would concentrate activities and reduce disturbance more than Alternative A.	Existing rights-of-way windows concentrate activities and reduce disturbance.	Same as Preferred.	Same as Preferred.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
LANDS (continued)	<p>Approximately 25% of rights-of-way applications would be impacted by 299,740 acres closed to (or no surface occupancy), avoidance and exclusion areas for surface disturbing activities; and 1,668,440 acres with seasonal restrictions.</p> <p>Mineral withdrawals and stock driveways would be revoked and other lands withdrawn for resource protection (161,354 acres). The same beneficial and adverse impacts would accrue as under Alternative C.</p> <p>The sale, exchange, or issuance of R&amp;PP patent (approximately 3,000 acres total) during the next 20 years would benefit the public as well as Bureau programs. (13,043 acres have been identified as possibly suitable for disposal.)</p> <p>Exclusion of rights-of-way in Currant and Red Creek drainages would have a significant impact on proposed road construction.</p>	<p>Approximately 45% of rights-of-way applications would be impacted by 168,410 acres closed to (or no surface occupancy), avoidance and exclusion areas for surface disturbing activities; 2,393,030 acres with seasonal restrictions.</p> <p>Those lands which remain withdrawn continue to be unavailable for mineral entry, causing a long-term loss of productivity of locatable mineral resources on about 3 million acres. 34,859 additional acres would also be withdrawn.</p> <p>The sale, exchange or issuance of R&amp;PP patent for 3,000 acres during the next 20 years would benefit the public as well as Bureau programs. (9,123 acres have been identified as possibly suitable for disposal.)</p> <p>Only small areas would be excluded under this alternative.</p>	<p>Approximately 5% of rights-of-way applications would be impacted by 33,132 acres closed to (or no surface occupancy), avoidance and exclusion areas for surface disturbing activities; 260,020 acres with seasonal restrictions.</p> <p>Mineral withdrawals would be revoked and other lands withdrawn for resource protection, (34,699 acres). Withdrawn lands would be unavailable for mineral entry, causing a long-term loss of productivity of locatable mineral resources.</p> <p>Same as Preferred.</p> <p>Same as Alternative A.</p>	<p>Approximately 50% of rights-of-way applications would be impacted by 665,490 acres closed to (or no surface occupancy), avoidance and exclusion areas for surface disturbing activities; 2,403,630 acres with seasonal restrictions.</p> <p>Mineral withdrawals would be revoked and other lands withdrawn for resource protection (279,324 acres). The newly withdrawn lands would be unavailable for mineral entry, causing a long-term loss of productivity of locatable mineral resources.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p>

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
LANDS (continued)	<p>Management resulting in avoidance of placing rights-of-way in the Greater Sand Dunes ACEC, South Pass Historic Viewshed/Landmark, and the proposed Steamboat Mountain and Tri-State ACECs may require major reroutes and extensive planning to limit impacts.</p> <p>Closure of the Red Creek utility line concentration area would prohibit additional pipelines along this corridor, which serves Clay Basin and oil fields to the south. This could adversely affect right-of-way users by increasing route length and construction costs.</p>	<p>Management resulting in avoidance of placing rights-of-way in the Greater Sand Dunes, South Pass Historic Landscape, and the Red Creek ACEC may require major reroutes and extensive planning to limit impacts.</p> <p>continuing to keep open the Red Creek utility lines, concentration area would allow additional pipelines which would benefit ROW users.</p>	<p>Management resulting in avoidance of placing rights-of-way in the Greater Sand Dunes, and South Pass Historic Landmark may require major reroutes and extensive planning to limit impacts.</p> <p>Same as Preferred.</p>	<p>Same as Preferred.</p> <p>Same as Preferred.</p>
LIVESTOCK GRAZING	<p>Existing and projected loss of forage due to mineral development, lands actions, and other disturbance would be approximately 4,568 AUMs.</p> <p>Benefits would accrue from completion and implementation of 42 AMPs on about 60% or the resource area.</p> <p>Prescribed burning on 67,700 acres and wildfire would have a short-term impact on forage but should result in long-term productivity of forage.</p>	<p>Current and projected loss of forage due to mineral development, lands actions, and rangeland improvements would be approximately 4,109 AUMs.</p> <p>Same as Preferred.</p> <p>Prescribed burning on 26,700 acres and wildfire would have a short-term impact on forage but should result in long-term productivity of forage.</p>	<p>Existing and projected loss of forage due to mineral development, lands actions, and other disturbance would be approximately 5,032 AUMs.</p> <p>Same as Preferred.</p> <p>Prescribed burning on 290,000 acres and wildfire would have a short-term impact on forage but should result in long-term productivity of forage.</p>	<p>Existing and projected loss of forage due to mineral development, realty actions and other disturbance activities would affect approximately 4,003 AUMs.</p> <p>Same as Preferred.</p> <p>Prescribed burning on 41,000 acres and wildfire would have a short-term impact on forge but should result in long-term productivity of forage.</p>

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
LIVESTOCK GRAZING (continued)	Closure of areas to surface disturbing activities (no surface occupancy) would adversely affect project placement and development aimed at improving livestock distribution.	Same as Preferred.	A reduction in closed areas (no surface occupancy) would allow project placement and development aimed at improving livestock distribution in more areas. This would have a beneficial affect on livestock distribution problems.	Same as Preferred.
	Surface disturbance on 9 allotments (384,000 acres in the allotments) could disrupt lambing.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Land disposal affecting approximately 1,087 AUMs, would be considered an irreversible irretrievable loss of forage.	Lands disposal affecting approximately 760 AUMs would be considered an irreversible loss of forage.	Same as Preferred.	Same as Preferred.
MINERALS <i>Oil and Gas</i>	The closing of 331,020 acres to leasing (over 225,000 acres are nondiscretionary closures); closing (no surface occupancy) of 327,480 acres to surface disturbing activities; avoidance or surface disturbance restrictions on 1,228,080 acres and seasonal restrictions on 1,668,440 acres would increase the costs of doing business and possibly preclude some activities.	The closing of 255,550 acres to leasing; closing (no surface occupancy) of 168,410 acres to surface disturbing activities; avoidance or surface disturbance restrictions on 1,097,640 acres and seasonal restrictions on 2,393,030 acres would increase the costs of doing business and possibly preclude some activities.	The closing of 231,440 acres to leasing; closing (no surface occupancy) of 33,132 acres to surface disturbing activities; avoidance or surface disturbance restrictions on 870,230 acres and seasonal restrictions on 260,020 acres would increase the costs of doing business and possibly preclude some activities. However, this impact would be greatly reduced from Alternative A.	The closing of 398,570 acres to leasing; closing (no surface occupancy) of 753,070 acres to surface disturbing activities, avoidance or surface disturbance restrictions on 1,261,060 acres and seasonal restrictions on 2,403,630 acres would increase the costs of doing business and possibly preclude some activities.



TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Oil and Gas</i> (continued)	Approximately 517.9 billion cubic feet of gas and 13.8 million barrels of oil would be produced which would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit.	Approximately 520 billion cubic feet of gas and 13.8 million barrels of oil would be produced during the 1991 through 2010 time period. This production would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit.	Approximately 684 billion cubic feet of gas and 16.6 million barrels of oil would be produced during the 1991 through 2010 time period. This production would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit.	Approximately 517 billion cubic feet of gas and 13.7 million barrels of oil would be produced during the 1991 through 2010 time period. This production would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit.
	Net disturbance after reclamation is estimated at 9,985 acres.	Net disturbance after reclamation is estimated at 10,092 acres.	Net disturbance after reclamation is estimated at 15,535 acres.	Net disturbance after reclamation is estimated at 9,970 acres.
<i>Coal</i>	Short-term and long-term effects would occur to coal leasing and development due to 12,600 acres determined unsuitable for leasing, 405 acres unacceptable for further leasing consideration, 33,800 acres unacceptable for surface mining, approximately 12,500 acres limited for surface facilities and over 135,800 acres subject to further mitigation and/or consultation. Increased costs of mitigation would have short-term and long-term effects on coal production activities by increasing costs and limiting timing of development.	Short-term and long-term effects would occur to coal leasing and development due to 14,400 acres determined unsuitable for leasing, 4,408 acres unacceptable for surface and subsurface mining, 5,800 acres unacceptable for subsurface mining, and 7,168 acres limited for surface facilities. Increased costs of mitigation would have short- and long-term effects on coal production activities by increasing costs and limiting timing of development.	Short-term and long-term effects would occur to coal leasing and development due to approximately 12,600 acres determined unsuitable for leasing, 19,160 acres unacceptable for surface mining operations but available for subsurface mining, 1,280 acres of limited surface facilities, and 135,800 acres are subject to further mitigation and/or consultation. Increased costs of mitigation would have short- and long-term effects on coal production activities by increasing costs and limiting timing of development but this impact would be reduced from Alternative A.	Short-term and long-term effects would occur to coal leasing and development due to 12,600 acres determined unsuitable for leasing, and 416,000 acres unacceptable for further leasing consideration. Increased costs of mitigation would have short- and long-term effects on coal production activities by increasing costs and limiting development.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Coal</i> (continued)	Approximately 325 million tons would be produced which would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit. Net disturbance after reclamation would be 9,618 acres.	Same as Preferred.	Approximately 340 million tons would be produced which would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit. Net disturbance after reclamation would be 10,618 acres.	Approximately 297 million tons would be produced which would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit. Net disturbance after reclamation would be 8,688 acres.
	Revoking the coal withdrawal would allow for sale or exchange of the coal resource.	The existing coal withdrawal would continue to preclude sale or exchange of the coal resource.	Same as Preferred.	Same as Preferred.
<i>Sodium</i>	Long-term benefits would occur from leasing. However, short-term and long-term affects would occur through increased costs of mitigation.	Same as Preferred.	Long-term benefits would occur from leasing. However, short- and long-term affects would occur through increased costs of mitigation. These would be less than the preferred alternative	Same as Preferred
	Approximately 115 million tons of trona would be produced from within the resource area which would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit.	Approximately 100 million tons of trona would be produced from within the resource area which would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit.	Approximately 115 million tons of trona would be produced from within the resource area over the next 20 years which would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit.	Same as Alternative B.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Mineral Materials</i>	Increased costs of mitigation (approximately 299,740 acres of no surface occupancy and 204,397 acres closed to salable minerals) would increase costs of doing business in both the short and long term. Some unauthorized use would continue. Materials sold would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit.	Increased costs of mitigation (about 168,410 acres of no surface occupancy and 88,327 acres closed to salable minerals) would increase costs of doing business in both the short and long term. Some unauthorized use would continue. Materials sold would be an irreversible irretrievable loss the mineral resource but would provide an economic benefit.	Costs of mitigation (about 33,132 acres of no surface occupancy and 32,842 acres closed to salable minerals) would decrease resulting in reduced costs of doing business in both the short and long term. Some unauthorized use would continue. Materials sold would be an irreversible irretrievable loss of the mineral resource but would provide an economic benefit.	Increased costs of mitigation (about 665,490 acres of no surface occupancy, and 259,327 acres closed to salable minerals) would increase costs of doing business in both the short and long term. Some unauthorized use would continue. Materials sold would be an irreversible irretrievable loss the mineral resource but would provide an economic benefit.
<i>Locatable Minerals</i>	Approximately 3 million acres of withdrawals would be revoked while 161,355 acres would be subject to new withdrawals. These withdrawals close the lands to mineral location however, affects would be much reduced than Alt A.	Existing withdrawals on approximately 3 million acres and 34,859 acres of new withdrawals close the lands to mineral location. This would cause an adverse affect to the exploration and development of mineral resources.	Approximately 3 million acres of withdrawals would be revoked while 34,699 acres would be subject to new withdrawals. These withdrawals close the lands to mineral location however, adverse affects would be less than either Alt A or Preferred.	Approximately 3 million acres of withdrawals would be revoked while 279,324 acres would be subject to new withdrawals. These withdrawals close the lands to mineral location, however adverse affects would be much reduced from alternative A.
	Additional requirements and mitigation for ACECs would increase costs of doing business for both short- and long-term periods.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Geophysical</i>	Areas closed to geophysical activity result in a loss of data, when would be considered an unavoidable adverse impact. Increased costs for mitigation would affect operations.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Areas open to vehicle use and exploration activity provide beneficial affects because retrieval of information is allowed.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Geophysical (continued)</i>	More areas would be closed to vehicle use and restricted to designated roads and trails, under this alternative and affects would be greater than Alternative A.	About 180,000 acres would be closed to vehicle travel and about 20 acres limited to designated roads and trails which affects the use of vehicles in retraval of information and can increase costs of oeprations.	Impacts would be slightly greater than Aternative A as more acres would be closed to vehicle use and restricted to designated roads and trails. However, since the purpose of an additional 5,000 acre closure.	More areas would be closed to vehicle use and restricted to designated roads and trails, under this alternative and affects would be greater than Alternative A.
OFF-ROAD VEHICLES	Beneficial impacts would result from the large amount of area available on existing roads and trails for off-road vehicle use, and 10,500 open acres in the Greater Sand Dunes ACEC.	Same as Preferred.	Reduced ORV open acreage to 5,500 acres in the Greater Sand Dunes ACEC and increased oil and gas development in that same area would limit recreational opportunities.	Same as Preferred.
	Recreational opportunities would be denied on 176,125 acres which would be closed to ORV use.	Recreational opportunities would be denied on 180,000 acres which would be closed to ORV use.	Recreational opportunities would be denied on 184,950 acres which would be closed to ORV use.	Recreational opportunities would be denied on 214,835 acres which would be closed to ORV use.
RECREATION	It is anticipated that recreation user days would increase by approximately 60% over 20 years due to the additional influx of people for anticipated mineral development and increased popularity of public lands for recreational activities.	The objective of managing for existing use and preventing resource damage would solve many of the current problems but the long-range needs of the public would not be met. Overuse of existing recreation areas would result from non-utilization of resource potential.	It is anticipated that non-consumptive recreation (sightseeing, hiking, etc.) would increase by 80% and consumptive recreation (hunting, ORV use, etc.) would increase by 40% over 20 years due to increased mineral development and resource restrictions.	It is anticipated that recreation use days would increase by approximately 40% over 20 years due to historical trends of the population fluctuation due to the mineral industry.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
RECREATION (continued)	Beneficial impacts would occur to recreation users as recreation use increases and additional facilities become available.	Adverse impacts would occur to recreation users as recreational use increases but additional facilities are not available.	Short-term benefits would occur for recreation users due to increased development of recreation sites. However, this would be offset in the long term due to mineral development activities increasing and displacing users, concentrating recreation use in other areas.	Long-term beneficial impacts would occur to recreation users as dispersed recreation use increases and existing facilities are improved.
	Disruption of recreation opportunities in areas of development would occur. This would be important to the local user but probably not nationally significant.	Same as Preferred.	Same as Preferred.	Same as Preferred.
SOCIOECONOMICS	Mineral development and exploration (trona, oil and gas, and coal), agricultural livestock and recreation related businesses (travel and tourism) would remain the area's major economic activities.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Trona</i>	Annual trona production would rise to 6 million tons in 1995 and remain at that level through 2010 for a cumulative economic output of approximately \$14 billion.	Annual trona production would remain at 5 million tons through 2010 for a cumulative economic output of approximately \$12 billion.	Same as Preferred.	Same as Preferred.
<i>Oil and Gas</i>	Annual oil and gas production would peak in 1996 and then decline through 2010. The cumulative economic output for oil would be approximately \$416 million and approximately \$783 million for gas.	Same as Preferred.	Annual oil and gas production would increase and peak in 2009 and decline in 2010. The cumulative economic output for oil would be approximately \$500 million and approximately \$941 million for gas.	Same as Preferred.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Coal</i>	Annual coal production would increase and peak in 2005 and then decline through 2010. The cumulative economic output for coal would be approximately \$10.4 billion.	Same as Preferred.	Annual coal production would increase and peak in 2009 and decline in 2010. The cumulative economic output for coal would be approximately \$10.9 billion.	Annual coal production would increase and peak in 1998 and then decline through 2010. The cumulative economic output for coal would be approximately \$9.5 billion.
<i>Coalbed Methane</i>	If coalbed methane resources are developed, the cumulative economic output could range from approximately \$118 million to \$202 million through 2010.	If coalbed methane resources are developed, the cumulative economic output could range from \$189 million to \$329 million through 2010.	Same as Alternative A.	Same as Preferred.
<i>Livestock</i>	It is assumed that actual livestock use (180,000 AUMs per year) would remain constant through 2010, although the potential to use 318,000 AUMs per year exists. The cumulative economic output for livestock for 20 years would be approximately \$597 million from 180,000 AUMs per year.	Same as Preferred.	Livestock use levels could increase to a maximum of 413,000 AUMs per year for a cumulative economic output of approximately \$1.43 billion.	Same as Preferred.
<i>Recreation</i>	Recreation use would increase by 2,320 recreation days each year through 2010. The cumulative economic output would be approximately \$293 million.	Recreation use remains constant each year through 2010. The cumulative economic output would be approximately \$223 million.	Recreation use would increase by 1,917 recreation days per year through 2010. The cumulative economic output would be approximately \$275 million.	Recreation use would increase by 2,722 recreation days per year through 2010. The cumulative economic output would be approximately \$311 million.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
VEGETATION	<p>There would be a short-term increase of annual weeds and a short-term decrease in vegetation production on the 67,700 acres proposed for prescribed burns. However, there would be a long-term increase in grass species and vegetation production. Wildfire would create a similar affect for both short and long term.</p> <p>Localized over use of forage would continue and could increase if full livestock grazing preference is achieved. Riparian areas could decline over the long term.</p> <p>A short-term impact would occur from the construction of rangeland improvement projects removing vegetation (about 105 AUMs); however, a long-term benefit to overall vegetation production through improved distribution would occur.</p> <p>Approximately 20,150 acres of mostly low density sagebrush would be lost over the long term due to development activities. In specific areas this could be important but resource area wide it is not expected to be significant.</p>	<p>There would be a short-term increase of annual weeds and a short-term decrease in vegetation production on the 26,700 acres proposed for prescribed burns. However, there would be a long-term increase in grass species and vegetation production. Wildfire would create a similar affect for both short and long term.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p>	<p>There would be a short-term increase of annual weeds and a short-term decrease in vegetation production on the 290,000 acres proposed for prescribed burns. However, there would be a long-term increase in grass species and vegetation production. Wildfire would create a similar affect for both short and long term.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Approximately 26,474 acres of mostly low density sagebrush would be lost over the long term due to development activities. In specific areas this could be important but resource area wide it is not expected to be significant.</p>	<p>There would be a short-term increase of annual weeds and a short-term decrease in vegetation production on the 41,000 acres proposed for prescribed burns. However, there would be a long-term increase in grass species and vegetation production. Wildfire would create a similar affect for both short and long term.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Alternative A.</p>

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
VEGETATION (continued)	Land disposals would result in an irreversible and irretrievable loss of the vegetation resource as most disposals are for urban expansion or industrial development.	Same as Preferred.	Same as Preferred.	Same as Preferred.
VISUAL RESOURCES	Benefits would result from improvement of Class IV and rehabilitation area values.	Adverse affects would occur from nonimprovement of rehabilitation areas.	Activation of suspended grazing preference could result in severe over grazing in the short term and a long-term decline in trend of range condition.  Adverse affects would occur from lowering of VRM management classes to accommodate development activities. About 367,008 acres out of 549,803 acres currently managed as Class II would move into Class III. Approximately 248,092 acres out of 416,555 acres currently managed as Class III would move into Class IV. About 2,977,169 acres managed in Class IV would stay the same, and 24,212 acres would be managed as rehabilitation areas.	There would not be any changes to VRM classifications. Benefits would occur from improvement of VRM rehabilitation areas to Class IV or above.
WATERSHED/SOILS	Benefits would occur to watershed resources from mitigation measures and particularly no surface occupancy area and right-of-way avoidance/exclusion areas preventing disruption of soil and watershed values.	Same as Preferred.	Same as Preferred.	Same as Preferred.



TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WATERSHED/SOILS (continued)	Formulation of AMPs with emphasis on riparian area management would greatly improve riparian areas over the next 20 years.	Some sediment loading due to livestock would continue over the long term but would decrease from current levels.	Maximization of livestock use would have an increased adverse impact on riparian areas and soil stability, and would increase salt and phosphate loading.	Improved distribution of livestock would protect riparian areas and reduce soil erosion.
	Control of recreation use would reduce compaction and erosion of soils, stream sedimentation, and loss of riparian areas.	Lack of ORV designations would impact soil stability and uncontrolled recreation use in riparian areas would adversely impact water quality and soils.	Recreation would be allowed to increase resulting in increased loss of soils through erosion and increased adverse impacts to riparian areas.	Recreation use would be controlled resulting in preservation of riparian areas and reduced soil erosion.
	The Ericson formation and the recharge area for the Town of Superior would be protected through management prescriptions developed for all activities in this area.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Restrictions on DLEs would prevent unsuitable soils from being cultivated thereby limiting sediments and salts from entering the Green River/Colorado River system.	Same as Preferred.	Same as Preferred.	Same as Preferred.
WILD HORSES	Loss of forage would occur due to development affecting approximately 3,000 AUMs.	Loss of forage would occur due to development affecting approximately 4,230 AUMs.	Loss of forage would occur due to development affecting approximately 9,482 AUMs.	Loss of forage would occur due to development affecting approximately 4,408 AUMs.
	Prescribed burning on 67,000 acres and wildfire would result in increased productivity of forage.	Prescribed burning on 26,000 acres and wildfire would result in productivity of forage.	Prescribed burning on 290,000 acres and wildfire would result in productivity of forage.	Prescribed burning on 41,000 acres and wildfire would result in productivity of forage.
	No surface occupancy requirements affect project placement and development aimed at improving wild horse distribution.	Same as Preferred.	Same as Preferred.	Same as Preferred.

ALTERNATIVES

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WILD HORSES (continued)	Approximately 30 AUMs would be lost due to construction of range improvements in wild horse herd areas. Development of 15 water facilities would provide a benefit to horses by improving distribution patterns.	Approximately 30 AUMs would be lost due to construction of range improvements in wild horse herd areas. Distribution problems would continue due to a lack of water development in herd areas.	Same as Preferred.	Same as Preferred.
	A long-term increase to full livestock grazing preference could create competition for forage.	Same as Preferred.	Same as Preferred.	Same as Preferred.
WILDLIFE	Management actions under this alternative would show reduced adverse impacts to wildlife when compared to Alternatives A and B but more than Alternative C.	Fences on public lands would continue to cause direct and indirect wildlife mortality. Even properly designed fences create a hazard to sage grouse, raptors, waterfowl, and non-game species.	Increased activity overall and emphasis on production would create an increased adverse effect to wildlife habitat and populations.	Wildlife and fisheries habitat would benefit the most under this alternative due to a decrease in development.
	Adverse impacts to crucial wildlife habitats from livestock grazing would increase current non-use AUMs are used.	Continuation of existing management would show continued impacts to wildlife habitat both beneficial and adverse.	Adverse impacts to crucial wildlife habitats from livestock grazing would increase over Alternative A.	Same as Preferred.

TABLE 2-2 (continued)

## AFFECTED RESOURCE

## PREFERRED ALTERNATIVE

## ALTERNATIVE A

## ALTERNATIVE B

## ALTERNATIVE C

WILDLIFE  
(continued)

Development of new AMPs and/or revision of old AMPs to include riparian objectives or to protect other crucial wildlife habitats would occur over the next 20 years and benefits would accrue slowly.

Adverse impacts to crucial wildlife habitats (i.e., riparian areas) from livestock grazing would continue and could increase if all AUMs are activated. Development of new AMPs and/or revision of old AMPs to include riparian objectives or to protect other crucial wildlife habitats would occur over the next 20 years and benefits would accrue slowly. Until new range surveys or sufficient monitoring is conducted to determine AUM availability, crucial wildlife habitats would continue to decline in some areas.

Development of new AMPs and/or revision of old AMPs to include riparian objectives or to protect other crucial wildlife habitats would occur over the next 20 years and benefits would accrue slowly. Until new range surveys or sufficient monitoring is conducted to determine AUM availability, crucial wildlife habitats would continue to decline in some areas. It would be unlikely that sufficient habitat would be provided to meet WGFD Strategic plan population objectives.

Water quality and fish habitat would improve as riparian areas improve and erosion decreases. The rate at which this occurs depends on the rate at which AMPs are written, or modified, to include riparian objectives, and management is fully implemented. This would probably occur gradually over the next 20 years.

Seasonal stipulations would be used to mitigate impacts to wildlife during crucial periods and would provide short-term protection for wildlife. Long-term maintenance and operations activities in crucial wildlife habitats would continue to cause displacement of wildlife from crucial habitats, including disruption of nesting, fawning and calving areas, and crucial big game winter habitats.

Seasonal stipulations provide short-term protection for wildlife. Long-term maintenance and operations activities in crucial wildlife habitats, would continue to cause displacement of wildlife from crucial habitats, including disruption of nesting, fawning and calving areas, and crucial big game winter habitats.

Seasonal stipulations would not be used in many cases. This would cause impacts to wildlife during critical periods and may directly or indirectly cause displacement or mortality. When seasonal stipulations are used, they provide short-term protection for wildlife. Long-term maintenance and operations activities in crucial wildlife habitats would increase in scope and continue to cause displacement of wildlife from crucial habitats, including disruption of nesting, fawning and calving areas, and crucial big game winter habitats.

Same as Preferred.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WILDLIFE (continued)	<p>Management prescriptions under this alternative would provide long-term benefits as in Alternative A. Displacement and loss of habitat from development and disruptive activities would create an unavoidable adverse impact. This affect would be the same or somewhat greater than under Alternative A, due to potential coal and locatable mineral development.</p> <p>Wildfire could result in a long-term loss of habitat and would be considered an unavoidable adverse impact to the habitat.</p> <p>Land disposals would result in an irretrievable loss of wildlife habitat. However, this is offset somewhat through proposed acquisitions to enhance wildlife habitat. Generally, big game winter habitat is involved in the disposal and fisheries and riparian habitat is proposed to be acquired.</p> <p>Surface mining can result in an irreversible irretrievable loss of wetlands and springs, and although off-site mitigation occurs, the original site is lost. Highway and major road development also result in irretrievable losses of habitat as they are generally permanent structures.</p>	<p>The combination of mineral and livestock activities in crucial wildlife habitats creates impacts that may be unacceptable in some locations. Displacement of part of the Steamboat Mountain elk herd could result in not being able to maintain a viable hunting population.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p>	<p>Same as Alternative A.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p>	<p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p>

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
WILDLIFE (continued)	Long-term impacts would continue to occur to wildlife habitat due to production activities and year round use in crucial areas. This impact would be reduced from Alternatives A and B.	Same as Preferred but to a greater extent.	Same as Preferred but to a greater extent.	Same as Preferred.
SPECIAL MANAGEMENT AREAS				
<i>Candidate Plants</i>	Adverse impacts on actual plant populations and potential habitat could occur from wildfire, livestock concentration areas, increased recreation use, mining claim activity and trampling by wild horses.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Restrictions on ORV use, geophysical activities, and fire suppression within the habitat area, and a 440-acre withdrawal would reduce impacts.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	The 1,900-acre land acquisition would benefit populations of <u>Descurainia torulosa</u> .	Beneficial effects to <u>Descurainia torulosa</u> from acquisition of 1,900 acres would not be realized.	Same as Alternative A.	Same as Preferred.
	Proposed withdrawals would reduce impacts to plant areas over Alternative A.	Operations on mining claims in plant areas would damage or destroy plants and habitat.	Same as Alternative A.	Same as Preferred.
<i>Cedar Canyon ACEC</i>	Impacts would be reduced from Alternatives A and B due to additional management prescriptions.	Management activities would have adverse impacts on ACEC values.	Same as Alternative A.	Same as Preferred.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Cedar Canyon ACEC</i> (continued)	Visual integrity would be protected by preventing activities within 1/2 mile of petroglyphs and by withdrawing 515 acres.	Visual intrusions within 1/2 mile could destroy the integrity of the petroglyph setting.	Same as Alternative A.	Same as Preferred.
	Big game habitat would continue to decline due to increased development but would be lessened due to implementing reclamation plans.	Big game habitat would continue to decline due to development activity.	Same as Alternative A.	Same as Preferred.
	Management prescriptions for rights-of-way would benefit resource values.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	ORV users would be impacted by restrictions to designated roads and trails.	ORV users would be less restricted as existing roads and trails are open to use.	Same as Alternative A.	Same as Preferred.
<i>Greater Sand Dunes ACEC</i>				
<u><i>Western Portion</i></u>	No impacts would occur.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<u><i>Eastern Portion</i></u>	Management prescriptions and restrictions would protect geological, cultural, visual, and wildlife values would be reduced or minimized from mineral development, lands actions, and ORV use. Residual impacts would be minor but would include:	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Seasonal displacement of elk, deer, and wild horses through ORV activity.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Loss of up to approximately 155 acres of vegetation through oil and gas development.	Loss of up to approximately 98 acres of vegetation through oil and gas development.	Loss of up to approximately 359 acres of vegetation through oil and gas development.	Same as Preferred.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Eastern Portion</u> (continued)	Reductions in the visual integrity of the Greater Sand Dunes area through surface facilities (e.g., pump jacks, tanks, dehydrators, etc.) associated with the development of up to 40 new oil and gas wells.	Reductions in visual integrity through surface facilities associated with the development of up to 25-30 new oil and gas wells.	Reductions in visual integrity through surface facilities associated with the development of up to 100 new oil and gas wells.	Same as Preferred.
	An increase in safety hazards to ORV users through the development of oil and gas related surface facilities (e.g., pipelines, snow fencing, etc.).	Same as Preferred.	An increase in safety hazards to ORV users through the development of oil and gas related surface facilities (e.g., pipelines, snow fencing, etc.) although this would be reduced by closing 5,000 acres to ORV use.	Same as Preferred.
	Dune ponds and related riparian habitat would continue to be affected by livestock, wild horses, and wildlife use.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Benefits that would be realized through the implementation of the management prescriptions and restrictions include:	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Protection of sensitive cultural resource sites.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Protection of the Crookston Ranch.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Protection of Native American religious and important geological values associated with the Boar's Tusk.	Same as Preferred.	Same as Preferred.	Same as Preferred.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<u>Eastern Portion</u> (continued)	Acquisition of approximately 1,920 acres to consolidate public lands and to enhance wildlife, visual, and wilderness values.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Retention of approximately 10,390 acres as an "open" ORV area for recreational use.	Same as Preferred.	Retention of approximately 5,390 acres as an "open" ORV area for recreational use.	Same as Preferred.
	Retention of forage and native plant composition for wildlife.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Monument Valley</i>	Revocation of withdrawals would open the area to mineral location and disposal, which could create impacts greater than Alternative A.	Beneficial effects would occur from continuing existing withdrawals.	Same as Preferred.	Beneficial effects would occur from pursuing withdrawals.
	Management of fragile soils and slopes would reduce silt production and sedimentation. Loss of scientific paleontological data or significant fossil resources would be prevented.	Same as Preferred.	Same as Preferred Alternative except some paleontological resources would be lost under Alternative B.	ACEC designation would further protect the area.
<i>Natural Corals ACEC</i>	Proposed protective measures would be beneficial to cultural management.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Wildlife and livestock grazing adversely affect riparian zones.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Locatable mineral development outside the withdrawal area would adversely impact the ACEC.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Closing the ACEC to coal development would benefit the ACEC.	Coal development on 160 acres would adversely affect the ACEC.	Coal development on 636 acres would adversely affect the ACEC.	Same as Preferred.



TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Natural Corral ACEC</i> (continued)	Management for Class II visual values would benefit the ACEC.	Management for Class IV values would allow landscape modification which could adversely affect resource values.	Same as Alternative A.	Management would allow for less modification of the landscape than in Alternative A.
<i>Oregon Buttes ACEC</i>	Natural values of ACEC would benefit from management prescriptions.	Same as Preferred.	Same as Preferred.	Same as Preferred.
	Dispersed non-motorized recreation use would benefit ACEC values, but limit some users because of the inability to utilize vehicles for access.	Same as Preferred.	Same as Preferred.	Same as Preferred.
<i>Pine Springs ACEC and Proposed Expansion Area</i>	Retention of existing ACEC and addition of acreage to encompass large concentrations of stone circle archeological sites would be beneficial to cultural resources.	Retention of existing 90-acre ACEC would protect cultural values.	Same as Alternative A.	Same as Preferred.
	Protective measures and withdrawal would guarantee integrity of the Pine Springs stratified archeological site and the stone circle sites in the Twin Butte area.	Protective measures and withdrawal would guarantee the integrity of the Pine Spring stratified archeological site.	Same as Alternative A.	Same as Preferred.
<i>Red Desert Watershed Area</i>	The 341,060-acre area would be managed under the multiple use concept and the standard management prescriptions used throughout the resource area would be applied to mitigate adverse impacts to resource values.	The 481,930-acre area to include checkerboard lands would be managed under the multiple use concept. Residual adverse impacts would occur as more activity would take place in the checkerboard land area.	Same as Alternative A.	Same as Preferred.
	Visual values could be less adversely impacted from development than Alternative A.	Visual impacts would occur under this enlarged watershed area.	Same as Alternative A.	Same as Preferred.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>South Pass Historic Landscape</i>	Adverse affects from mineral development and other surface disturbing activities would be reduced from Alternative A.	Mineral development and other surface disturbing activities would adversely affect historical and scenic resources.	Same as Alternative A.	Same as Preferred.
	Designation as an ACEC would require additional mitigation for the location of mining claims which would reduce impacts from Alternative A.	Locatable mineral activity could create adverse affects to the landscape.	Same as Alternative A.	Same as Preferred.
	Withdrawal of 5,260 acres would preclude mineral location and disposal and benefit cultural resources.	No withdrawal would mean that mineral location and disposal could occur causing potential adverse impacts to the Landmark.	Same as Alternative A.	Same as Preferred.
<i>Steamboat Mountain Area</i>	Management of the area would protect wildlife values and reduce impacts to the elk herd. This alternative would provide greater benefit than Alternatives A and B.	Surface disturbing activities including 50 coalbed methane wells would result in loss of wildlife habitat and displacement of the Sands Elk herd on Steamboat Mountain.	Same as Alternative A.	Same as Preferred.
	Withholding mineral leasing until a plan is prepared and no surface occupancy prescriptions would eliminate impacts to resource values in the area.	No similar action.	No similar action.	Same as Preferred.
	Up to 43,010 acres would be withdrawn to protect resource values which would reduce impacts from Alternative A.	No new withdrawals would be pursued which would allow exploration and development of locatable minerals which could adversely affect wildlife resources.	Same as Alternative A.	Same as Preferred.

# AFFECTED RESOURCE

TABLE 2-2 (continued)

PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Tri-State Monument</i>			
Designating 131,780 acres as an ACEC would offer more protection to watershed and fisheries values than Alternatives A and B, but less than Alternative C.	Maintaining the status quo in the Red Creek ACEC and management in Currant and Sage Creeks would allow erosion caused by human activities to continue in these watersheds and fisheries values.	This alternative which retains the Red Creek ACEC but would not designate Currant or Sage Creek as part of a larger ACEC would offer the least protection of fisheries and watersheds of all alternatives.	Under this alternative the ACEC would be enlarged to 293,220 acres and would encompass Currant Creek, Sage Creek and the existing Red Creek ACEC. This alternative would offer the greatest protection to fisheries and watershed values.
Designation of Currant Creek as an exclusion area and the avoidance of rights-of-way within the remainder of the ACEC would require major reroutes of facilities, but would offer protection from erosion, sedimentation and siltation. Closure of the right-of-way concentration area through Red Creek would offer the same protection.	Designation of all but Sage Creek as a right-of-way avoidance area would require major reroutes of facilities but would offer protection from erosion.	Designating the Red Creek ACEC as an avoidance area for rights-of-way would require major reroutes of facilities, but would offer protection from erosion.	Designation of rights-of-way avoidance areas throughout the area, closing of the right-of-way concentration area through Red Creek and excluding rights-of-way from Currant Creek, Pine and Little Mountains would require major reroutes of facilities but would protect the watershed from erosion.
Withdrawal of 73,860 acres within Currant Creek and Red Creek would protect this area from adverse impacts associated with mineral exploration.	No acreage would be withdrawn; however, existing withdrawals would not be revoked which would protect this area from adverse impacts associated with mineral exploration.	No acreage would be withdrawn; however, existing withdrawal would be revoked allowing mining claim activity which could add to sediment loads.	Withdrawing 131,780 acres would protect the area from the adverse impacts associated with mineral location and development.
Closure in specified areas to mineral leasing, mineral location, sodium exploration and sales would mean a loss of revenue from mineral development.	Closure of Currant Creek to sodium exploration could mean a loss of revenue from minerals development.	The area would be open to mineral leasing and mineral material sales, and revenues from mineral development could occur.	Currant Creek and Red Creek would be closed to mineral leasing, material sales and sodium exploration which would protect resource values but would result in a loss of revenue from mineral development.

TABLE 2-2 (continued)

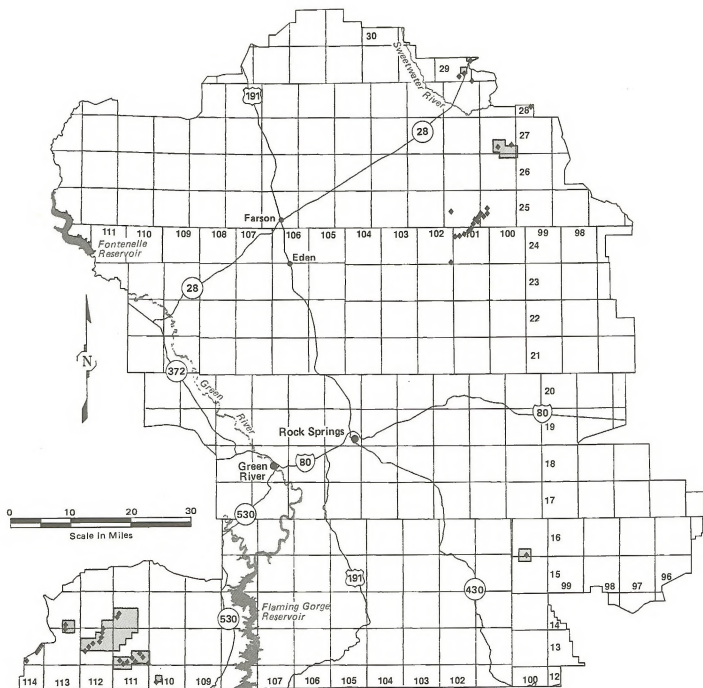
AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Tri-State Monument (continued)</i>	ORV activity would be limited to designated roads and trails which would restrict recreational users, but which would benefit the area by limiting erosion and sedimentation.	ORV activity would be limited to existing roads and trails which would be less restrictive than the Preferred Alternative, but which would be less beneficial to resource values and allow sedimentation to continue.	Same as Alternative A.	Same as Preferred Alternative.
<i>Current Creek/Sage Creek Portion of Tri-State</i>	Watershed and fisheries values in Current Creek would benefit from closing the area to surface occupancy.	Same as Preferred.	Management prescriptions for surface disturbing activities would allow additional activities which could adversely affect watershed and fisheries values.	Same as Preferred.
	Surface disturbing activities would avoid Sage Creek watershed which would benefit watershed values.	Sage Creek would benefit from mitigation plans for surface disturbing activities.	Same as Alternative A.	Same as Preferred.
	Impacts from ORV activity would be reduced from Alternative A, once transportation planning is completed.	ORV activity could adversely affect water quality, watershed values, and fisheries habitat.	Same as Alternative A.	Same as Preferred.
<i>Red Creek Portion of Tri-State</i>	Accelerated erosion would decrease over the long term with improved livestock and wildlife management, transportation planning, and restrictions on development.	Maintaining status quo would continue to allow accelerated erosion associated with human activities.	Accelerated erosion could have adverse affects which would add to the sedimentation loading in the Green River. This would be nationally significant.	Soil erosion rates should decrease with improved grazing and wildlife management, road closures, and restrictions on development. Soil loss could be reduced from 84,000 tons per year to 60,000 tons per year.

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Red Creek Portion of Tri-State (continued)</i>	<p>Due to management prescriptions, riparian areas would improve over the long term.</p> <p>Preparing a transportation plan and closing and rehabilitating unnecessary roads and trails would reduce erosion and sedimentation from Alternative A.</p> <p>Closure of the area to pipelines and facilities would reduce accelerated erosion.</p> <p>Pursuing withdrawals would preclude locatable mineral activity which would benefit watershed values.</p>	<p>Adverse affects would occur to riparian values due to continued livestock grazing.</p> <p>ORV use would continue to create additional two-track trails and subsequent erosion and sedimentation.</p> <p>Construction of pipelines and facilities would remove vegetation and contribute to accelerated erosion.</p> <p>Maintenance of the existing withdrawals would preclude locatable mineral activity.</p>	<p>Activation of full and suspended grazing preference would increase adverse affects to riparian and watershed values and wildlife habitat and wildlife numbers.</p> <p>ORV use and geophysical activities would continue to create additional two-track trails and subsequent erosion and sedimentation.</p> <p>Same as Alternative A.</p> <p>Revocation of withdrawals would allow locatable mineral activity and land disposals which could result in adverse affects to watershed values.</p> <p>Same as Preferred.</p>	<p>No grazing would be allowed on 800 acres of riparian for 3 years to allow for re-establishment of willow stands which would reduce bed load and suspended sediment and improve riparian areas.</p> <p>Only those roads necessary for management of the area would be kept open. Rehabilitation of other roads would reduce sedimentation.</p> <p>Same as Preferred.</p> <p>Same as Preferred.</p>
<i>White Mountain Petroglyphs ACEC</i>	<p>The existing ACEC and withdrawal would be retained to protect ACEC values.</p> <p>Surface disturbance restrictions on 500 acres surrounding the petroglyphs would increase benefits to visual integrity and spiritual values.</p>	<p>Same as Preferred.</p> <p>Fewer restrictions on 500 acres would decrease benefits to visual integrity and spiritual values.</p>	<p>Same as Preferred.</p> <p>Same as Alternative A.</p>	<p>Same as Preferred.</p> <p>Same as Preferred.</p>

TABLE 2-2 (continued)

AFFECTED RESOURCE	PREFERRED ALTERNATIVE	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
<i>Wild and Scenic Rivers</i>	Designation and interim management prescriptions would provide a beneficial impact and protect wild and scenic river values. Some impacts may occur from mining claim activity but the probability is slight.	Development within the river corridors could result in the loss of wild and scenic river values.	Same as Preferred.	Same as Preferred.



Candidate Plant Species

✱ ✱ Actual Sites

■ Potential Habitat

Map 4  
Candidate Plant Species  
Green River Planning Area

## ALTERNATIVES

The roughly 440 acres associated with *Arabis pusilla*, *Astragalus proimanthus*, *Descurainia torulosa*, and *Thelesperma pubescens* would be closed to oil and gas leasing or any other surface mining mineral activities or the location of associated facilities (see Minerals section). Approximately 2,670 acres with known plant sites or known habitat would be open to oil and gas leasing with a no surface occupancy stipulation.

Activities such as fencing, Interpretive signs, or barriers to ensure protection to the plant species would be considered for both existing populations and for potential habitat.

Any management actions on potential habitat of candidate plant species communities on federal land or non-federal surface with federal minerals (about 39,320 acres) would require searches for the plant species prior to project or activity implementation. New candidate plant populations would be closed to activities that could adversely affect these species and their habitat. Closed or restricted activities would include limiting off-road vehicle travel to designated roads and trails and limiting fire suppression other than use of existing roads and trails.

Approximately 1,900 acres of additional *Descurainia torulosa* habitat on Pine Butte would be acquired.

See other resource management prescriptions in this document for other restrictions that may apply to candidate plant species management activities.

### Cultural, Natural History, and Paleontological Resource Management

**MANAGEMENT OBJECTIVES:** The objectives for management of the cultural and paleontological resources would be to: (1) expand the opportunities for scientific study, and educational and interpretive uses of cultural and paleontological resources; (2) protect and preserve the most important cultural and paleontological resources for future generations; and (3) resolve conflicts between cultural/paleontological resources and other resource uses. Of particular concern would be significant sites of historic or prehistoric human habitation, sites demonstrating unique ethnic affiliation, places having special spiritual or religious significance to Native Americans, and vertebrate fossil localities.

**MANAGEMENT ACTIONS:** Sites listed on the National Register of Historic Places (NRHP) and NRHP

eligible sites would be managed for their local and national significance, under the guidelines of the National Historic Preservation Act (especially sections 106 and 110) (Appendix 6-1), the Archeological Resources Protection Act (ARPA), and the American Indians Religious Freedom Act (AIRFA) (Appendix 6-2) and to ensure unavoidable adverse effects would be properly mitigated prior to disturbance or destruction.

Appropriate level of analysis of all BLM undertakings would be conducted to determine National Register of Historic Places eligibility and potential effects to those historic properties in the area of potential effect in accordance with the National Historic Preservation Act (Appendix 6-1).

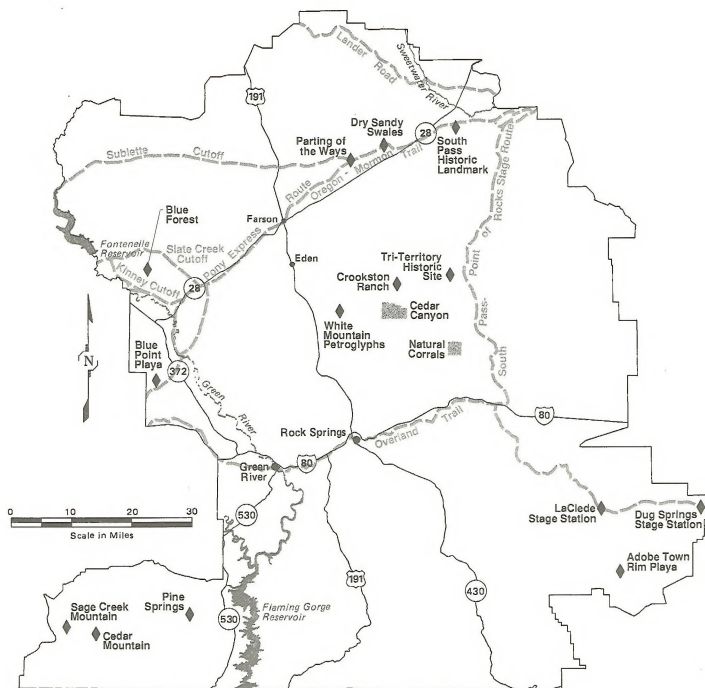
### Historic Trails

Management of the Oregon and Mormon Pioneer National Historic Trails and the Pony Express and California historic trails would provide cooperation with the National Park Service in implementation of the Comprehensive Historic Trails Management Plan for the Oregon and Mormon Pioneer National Historic Trails. Within ¼ mile or the visual horizon (whichever is less) of any contributing segment (233 miles, 74,560 acres) would be an avoidance area for surface disturbing activities (Map 5); however, development activities such as roads, pipelines, and powerlines could be considered to cross trails in areas where previous disturbance has occurred and the trail has lost its National Register characteristics and would no longer be considered a contributing segment to a trail.

Vehicles, such as those used for geophysical exploration, or large heavy vehicles such as buses used in recreational tours, or similar activities, could cross and drive down the trails, provided a site specific analysis determines that no adverse effects would occur. Geophysical activities up to 300 feet from the trails could be considered provided a site specific analysis determines that visual intrusions and adverse effects would not occur; however, actual geophysical activity such as vibroseis, explosives, blasting, or drilling could not occur directly on the trails.

No blading would be allowed on any historic trail unless necessary to protect life or property. Heavy equipment may be driven on trails following a site specific analysis, and provided trail values are protected.





**Map 5**  
**Select Cultural**  
**Resource Sites**  
**and Historic Trails**  
**Green River Planning Area**

## ALTERNATIVES

Management of historic roads and trails that are eligible for the NRHP but are not Congressionally designated historic trails such as the Overland Trail, the Cherokee Trail, and the Point of Rocks to South Pass Road (about 170 miles, 54,400 acres) would be recommended for listing to the National Register of Historic Places. Management prescriptions would generally be the same as those for designated trails.

Various Expansion Era (i.e., 1870-1940) trails (15 trails and approximately 800 miles) would be managed according to their historical context. Expansion Era trails are those routes developed after establishment of the Transcontinental Railroad in Wyoming in 1869. Management actions would include development of activity plans with the objective of preserving significant contributing segments (estimated at not more than 10 miles of each of the 15 trails, about 150 miles) in their natural condition and would apply the same management prescriptions applied to NRHP eligible historic trails.

The Parting-of-the-Ways historical site would be protected by closing it to exploration and development of locatable minerals. A 40-acre withdrawal would be maintained. The site would be managed under the prescriptions for management of the National Historic Trail.

The integrity of the Dry Sandy Swales (1 mile, 20 acres) would be protected. The site would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see Lands and Realty Management and Minerals Management discussions). The ¼ mile area either side of the Dry Sandy Swales would be open to surface disturbing activities provided objectives for the area could be met and visual integrity retained (see the discussion in Lands and Realty Management).

The Big Sandy Station, Big Timber Station, Freighters Springs Station, Camp Carmichael, Lander's Camp, the site of the Simpsons' Gulch wagon train burning, the Eden-Farson site, and the Finley and Chicken Springs sites would be managed for the preservation of cultural and historical values. Cultural resource management plans would be developed to determine the site specific resource actions necessary.

Archaeological resources in the Little Colorado Desert, North Nitchee Gulch, and Wamsutter Arch concentrated oil and gas areas (that may be eligible for the NRHP under Criterion D) would be managed by synthesizing existing data with the objective of facilitating surface

disturbing activities without sacrificing significant archaeological values. A programmatic memorandum of agreement would be negotiated with the SHPO and ACHP to achieve this objective. Historic resources that could be eligible under NRHP criterion (36 CFR 60 and Appendix 6-1) would not be managed according to this prescription.

Surface disturbing activities in playa lake areas (Blue Forest, 24,640 acres; Blue Point, 3,200 acres; and Adobe Town Rim, 1,280 acres) would be managed by developing programmatic memoranda of agreement for data recovery with the SHPO and ACHP. Each playa would be managed as an NRHP eligible historic district.

### Rock Art Sites

Rock art sites would be managed to protect their intrinsic values. Five known rock art sites (Cedar Canyon, LaBarge Bluffs, Sugarloaf, Tolar, and White Mountain, 100 acres) would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

These areas would be closed to surface disturbing activities that could adversely affect rock art resources (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see the discussion in Lands and Realty Management and Minerals Management for this alternative); to the location of mining claims (withdrawals would be pursued as necessary) (see the Lands and Realty Management section); to mineral material sales for sand, gravel, or other types of construction or building materials; and to the use of explosives and blasting. These areas would also be closed to off-road vehicular travel including vehicles used for geophysical exploration activities (see the discussion on Off-Road Vehicle Management for this alternative), and to the use of fire retardant chemicals containing dyes.

Lands within ½ mile radius of the 5 rock art sites (2,400 acres) would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

These areas (2,400 acres) would be closed to surface disturbing activities that could adversely affect rock art resources (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see Lands and Realty Management and Minerals Management discussions); to mineral material sales for sand, gravel or other types of construction or building materials; and to the use of explosives and blasting.

## ALTERNATIVES

Off-road vehicle travel, including vehicles used for geophysical exploration and fire suppression activities, would be limited to designated roads and trails (see the discussion on Off-Road Vehicle Management).

All other rock art sites would be managed on a case-by-case basis according to resource values.

### Other Sites

LaCiede Stage Station, Dug Springs Stage Station, and the Pine Springs site (110 acres) would be protected and would be closed to surface disturbing activities that could adversely affect the sites (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; mineral material sales; etc.) (see Lands and Realty Management and Minerals Management discussions).

These sites would be closed to exploration and development of locatable minerals. Withdrawals would be pursued for Dug Springs (10 acres) and LaCiede Stage Stations (10 acres); the 90-acre withdrawal in Pine Springs would be retained. Cultural resource management plans would be written for these sites as necessary.

All known human burial sites would be protected. Native American burial sites would take into account recommendations from appropriate tribes. Management of these areas (about 2 acres) would be closed to surface disturbing activities that could adversely affect them (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; locatable mineral exploration and development; etc.) (see Lands and Realty Management and Minerals Management discussions). Data recovery would not be the preferred method of mitigation of adverse effects to any burial location. Scientific analysis of human remains discovered during any development activity would be allowed.

The Tri-Territory Marker (10 acres) would be protected by closing it to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see Lands and Realty Management and Minerals Management discussions); to exploration and development of locatable minerals; and a withdrawal would be pursued. A cultural resource management plan would be prepared for the site if necessary. The area would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area.

The Aboriginal Quarry site (160 acres) would be protected by closing it to mineral location and pursuing a withdrawal. The site would be closed to surface disturbing activities that could adversely affect the site (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; mineral material sales; etc.) (see Lands and Realty Management and Minerals Management discussions).

North and South Table Mountains (1,280 acres) would be managed to preserve cultural information within standard Section 106 and 110 compliance. The area would be closed to surface disturbing activities that could adversely affect the cultural sites (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (see Lands and Realty Management and Minerals Management discussions), but would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area.

Consultation with appropriate Native American groups concerning areas of concern for spiritual and religious purposes would occur in accordance with the American Indian Religious Freedom Act.

Incidences of potential violation of the Archeological Resources Protection Act would be investigated.

Interpretive materials which describe the cultural resources of the area, their significance, and the bureau's responsibility toward these resources would be prepared. Historical aspects of all programs would be interpreted for public appreciation and enjoyment as appropriate.

Exchanges for acquisitions for approximately 280 acres and cooperative agreements would be pursued to enhance management of cultural resources.

Collecting of vertebrate fossils may be allowed with a written authorization that may be issued only to an academic, scientific, governmental, or other qualified institution, individual, or consultant. Collection of common invertebrate fossils and petrified wood for hobby purposes may be allowed on public lands and is regulated under 43 CFR 3600, 3622, and 8365.

Surface disturbance activities that affect fossil locations would be mitigated and inventories would be required. Surveys may be required on areas with potential for fossils, including outcrops of the Bridger and Washakie Formations, and the lowermost 100 feet of the Laney Member.

## ALTERNATIVES

The Steamboat Mountain and Boar's Tusk-Killpecker Sand Dunes areas would be managed to protect the unique geological and ecological features to provide for public interpretation of these features. The road around Boar's Tusk would be closed.

See other resource management prescriptions in this document for other restrictions that may apply to cultural, natural history, and paleontological management activities.

### Fire Management

**MANAGEMENT OBJECTIVE:** The objectives for fire management would be to use prescribed fire to meet resource management objectives (such as improvement of wildlife habitat and range condition), and to suppress wildfires for the protection of resource values, property, and human life.

**MANAGEMENT ACTIONS:** Fire management activities would meet resource management objectives, protect sensitive resources and public health, safety, and property.

Fire suppression would be provided commensurate with resource values. Fire strategies would include confinement, containment, and control (see Glossary). Figure 2 shows the decision-making process used when dealing with fire. Wildfire would not be utilized as a management tool.

Fires around populated areas, Hickey, Pine, and Little Mountains, Steamboat Mountain conifer communities, and the structures at Crookston Ranch would receive immediate suppression efforts.

Fire retardants and chemicals would not be utilized in rock art sites. Suppression activities would be designed to protect fisheries, candidate plant areas, and other special management areas.

The sensitive cultural and historical sites would be closed to fire suppression activities other than use of existing roads and trails.

Timber stands (conifer) would be managed under the guidelines of full suppression (contain, confine, control) for wildfires.

Use of rubber-tired heavy equipment would be allowed if necessary to suppress fire in the Pine Springs Expansion Area and in the aboriginal quarry site.

Prescribed fire by both planned and unplanned ignition would be used as a resource management tool. Activity plans could be prepared to address specific applications in accordance with resource objectives.

Prescribed burning would be conducted so that ambient air quality standards would not be violated.

Aspen and woodland juniper would be considered for prescribed fire.

See other resource management prescriptions in this document for other restrictions that may apply to fire resource management activities.

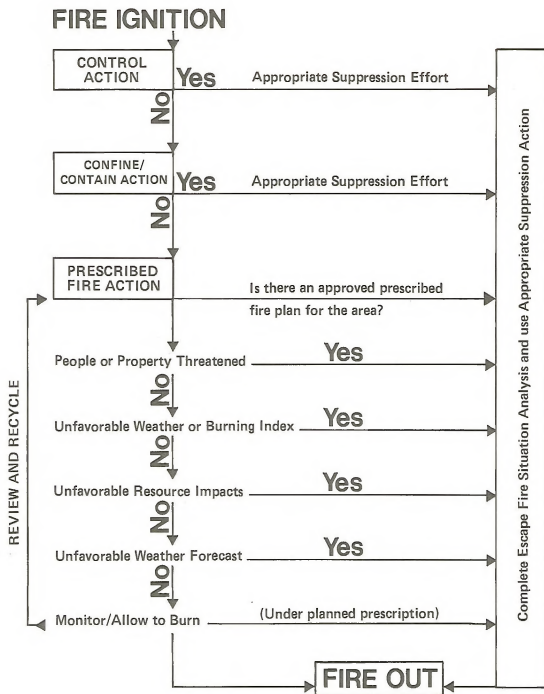
### Forest Resource Management

**MANAGEMENT OBJECTIVES:** The objective for management of forest lands would be to provide production of forest products in accordance with other resource goals, objectives, and restrictions.

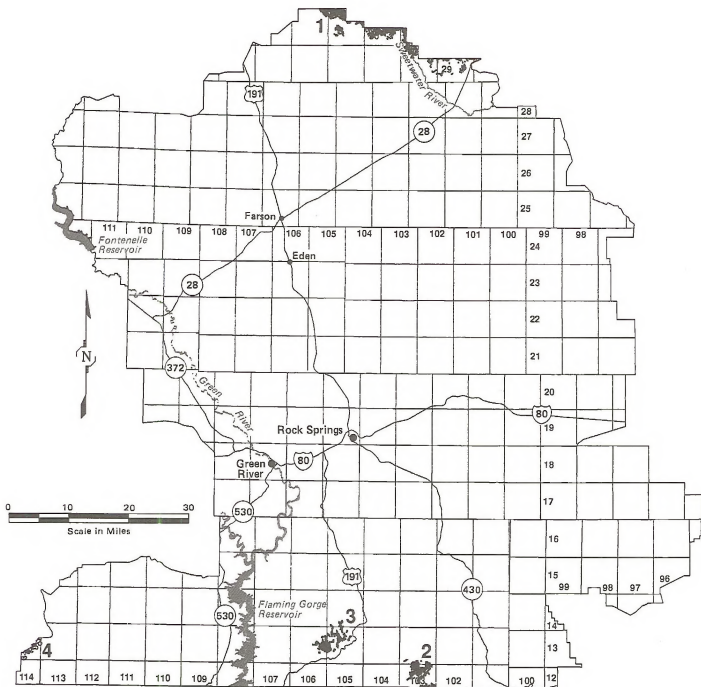
Noncommercial forest lands (woodlands) would be managed to optimize cover and enhance habitat for wildlife, protect soil and watershed values, and complement recreation uses.

**MANAGEMENT ACTIONS:** The planning area has been broken into 4 timber compartments for timber management: Wind River Front, Pine Mountain, Little Mountain, and Hickey Mountain-Table Mountain (Map 6). Hickey Mountain-Table Mountain would be managed under the woodland prescriptions described in this alternative. The Wind River Front would be a restricted forest management area where forest resources would be managed for commercial forest values, to improve the health, vigor, and diversity of forest stands, and still give full consideration to other resource values such as watershed, wildlife, and scenic values. Pine and Little Mountain areas would be managed to enhance other resources, and activities would be designed to benefit other resource uses. Harvest levels from all areas combined (about 7,943 acres) could average 500,000 board feet annually (Table 2-3). Priority harvest would be given to mature, decadent, and diseased trees.

Commercial and woodland forest lands would be managed to meet the local demand for minor forest products (e.g., fuelwood, posts and poles, wildlings, and Christmas trees). This use would be permitted to the extent that it would meet other resource objectives.



**Figure 2**  
**Unplanned Ignitions**  
**Fire Decision Chart**



**Timber Compartment**

- 1 Wind River Front
- 2 Pine Mountain
- 3 Little Mountain
- 4 Hickey-Table Mountain

**Map 6**  
**Timber Compartment**  
**Green River Planning Area**



## ALTERNATIVES

**TABLE 2-3**  
**ESTIMATED ANNUAL ALLOWABLE CUT**  
**PER TIMBER UNIT**  
**(board feet)**

	Allowable Cut 500,000	Allowable Cut 1,000,000
Wind River	250,000	500,000
Pine Mountain	130,000	260,000
Little Mountain	115,000	230,000
Henry's Fork	5,000	10,000

The allowable cut is based on commercial timber acres in each unit.

The major consideration in the harvesting program for the Wind River Front would be to improve the condition of the forest stand with emphasis meeting wildlife habitat needs. The major consideration in harvesting in other areas would be to provide the stability and habitat for watershed and wildlife needs. Soil, watershed, and wildlife cover would be important considerations. Stand conditions and management considerations would dictate harvest methods and size and shape of units.

Cutting methods would include clearcutting, individual tree marking, shelter wood, thinning, and group selection. Clearcut units would not exceed 25 acres in size unless a site specific analysis indicates RMP resource objectives would be met with a larger cut. All clearcuts would consider other resource values such as escape cover for wildlife. Clearcut unit size and shape would be designed to maximize natural regeneration and edge effect for wildlife.

Approximately 1,436 acres of commercial timber within big game winter ranges would be closed to logging activity from November 15 to April 30. If the logging unit would be within the 2,662 acres of commercial conifer in big game parturition habitats, the area would be closed to timber harvest activities from May 1 through June 30.

From February 1 to July 31, there would be no logging activity on 22 acres within 2 miles of sage grouse nesting sites and ½ mile of raptor nests (see Minerals Management). Exceptions may be approved if conditions described in Appendix 7-1) apply.

A 500-foot buffer from live water, floodplains, and/or riparian/wetland areas (247 acres) would be applied to surface disturbing activities (e.g., roads), unless impacts to soils, watershed, water quality, and fisheries can be mitigated. No surface disturbance would be allowed within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages, without an approved plan to mitigate impacts to water quality. Linear crossings would be considered on a case-by-case basis (see Watershed section).

Logging operations on slopes steeper than 45 percent would be limited to technologically, environmentally, and economically acceptable methods such as cable yarding and/or horse skidding.

Slash disposal would be tailored to the individual harvest unit to promote reforestation, minimize erosion, and allow big game movement. Methods that would be employed include broadcast burning, piling and burning, lopping and scattering, chipping, and roller chopping.

Stand replacement of harvested areas or areas denuded by natural causes would be revegetated with tree seedlings within prescribed time periods of 5 to 15 years (fully stocked).

Woodland forests consist of juniper, aspen, and limber pine (127,977 acres). These stands would be managed to enhance other resource values, mainly watershed, recreation, and wildlife considerations.

Woodland forest would be managed using silvicultural practices that promote stand viability. Treatments would include thinning, harvesting, chaining, and burning. The vegetative material resulting from these treatments would normally be sold as public demand sales.

Commercial conifer stands would be managed under the guidelines for full suppression of wildfires. Aspen and juniper stands would be available for prescribed fire activities to enhance watershed and wildlife values.

Woodland forest acreage would be maintained and no treatment would be implemented that converts the areas to another vegetation type. Old aspen stands may be replaced by stands of sprouting aspen by various treatment (e.g., burning, etc.), or old decadent trees may be left standing or downed to provide cover or other habitat for wildlife (e.g., Animal Inn). Silvicultural treatments in mature timber stands would be designed to improve wildlife habitat and watershed condition, i.e., create small openings to provide forage for wildlife and accumulate snow drifts to increase moisture. Tree

## ALTERNATIVES

seedlings would be re-established within these openings. Cottonwood trees would not be available for any harvesting. Firewood cutting would be allowed within and adjacent to campgrounds.

See other resource management prescriptions in this document for other restrictions that may apply to forest resource management activities.

### Hazardous Materials and Other Hazards

**MANAGEMENT OBJECTIVES:** The objectives for management of hazardous materials and waste would be to: 1) protect public and environmental health and safety on BLM-administered public lands, 2) comply with applicable federal and state laws, 3) prevent waste contamination due to any BLM-authorized actions, 4) minimize federal exposure to the liabilities associated with waste management on public lands, and 5) integrate hazardous materials and waste management policies and controls into all BLM programs.

**MANAGEMENT ACTIONS:** For BLM-authorized activities that involve hazardous materials or their use, precautionary measures would be used to guard against releases or spills into the environment.

Sale or transfer of public lands on which storage or disposal of hazardous substances has been known to occur would require public notification of the type and quantity of such substances.

BLM-administered public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations and contingency plans. Parties responsible for contamination would be liable for cleanup and resource damage costs, as prescribed in federal and state regulations. If at all possible, the responsible parties would bear the financial burden of cleanup and resource damage costs.

Any produced water pit or drilling fluid pit that shows indications of containing hazardous wastes would be tested for the TCLP constituents and if analysis proves positive, the fluids would be disposed of properly. The costs of testing and disposal would be the responsibility of the operator.

If hazards should be identified, the BLM will provide appropriate warnings and establish precautions for safety

hazards associated with the use of any areas on BLM-administered public lands.

See other resource management prescriptions in this document for other restrictions that may apply to hazardous materials management activities.

### Lands and Realty Management

**MANAGEMENT OBJECTIVES:** The objectives for the management of the land and realty program would be to manage the public lands to support the goals and objectives of other resource programs, to respond to public demand for land use authorizations, and to acquire administrative and public access where necessary.

**MANAGEMENT ACTIONS:** The lands and realty management actions are divided into five groups.

#### Land Ownership Adjustment

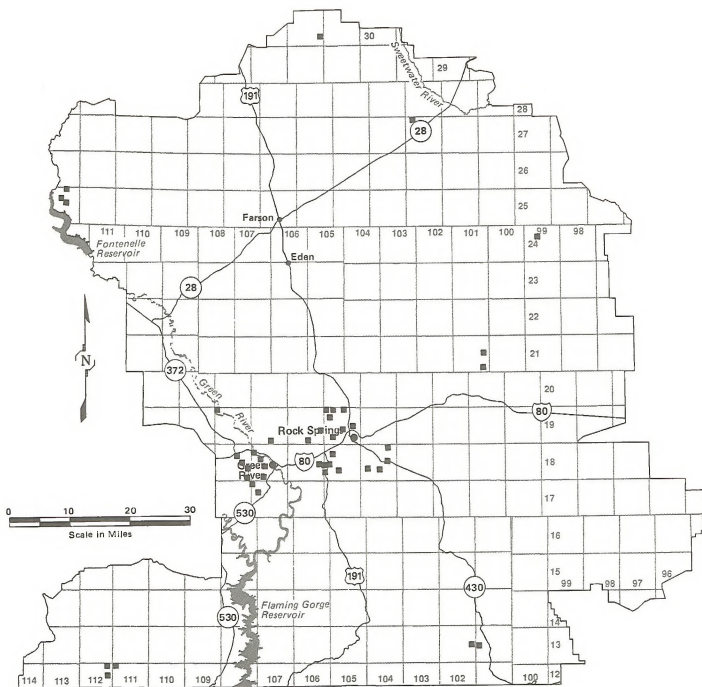
Public lands would be retained in federal ownership with the exception of those lands, which have future potential for disposal, described in Appendix 8-1 (13,043 acres) (see Map 7). All disposals must conform to the criteria listed in Appendix 8-2). The disposal of these lands may allow for the acquisition of important resource lands or meet other important public objectives such as community expansion and economic development. Public lands may have further potential for disposal because they are isolated and would be difficult to manage. The preferred method of disposal would be by land exchanges.

Lands would be provided for solid waste disposal to government entities through sale or exchange. Government entities would be encouraged to purchase unused portions of sanitary landfills currently authorized under Recreation and Public Purposes leases. The BLM would aid in finding suitable landfill sites on public land for purchase or exchange (see the Hazardous Materials Management section).

To prevent string development, tracts of land along Interstate Highway 80 interchanges would not be considered for disposal unless a tract is included in Appendix 8-1 and meets the disposal criteria.

Sweetwater County School District No. 1 would be given the opportunity to acquire Lots 3,4,5, Section 28, T. 19 N., R. 105 W. (124 acres) for school purposes prior to any other type of disposal.





■ ■ Disposal Area

**Map 7**  
**Preferred Alternative**  
**and Alternatives B and C**  
**Land Tenure**  
**Adjustment Parcels**  
**Green River Planning Area**

## ALTERNATIVES

Action would be taken to acquire lands (about 21,782 acres) by purchase/exchange or through cooperative agreement to support resource needs (Appendix 8-3). Lands would include private/State lands along upper stream reaches of the Big Sandy River; State inholdings in WSAs; other lands with important resource values. In those instances where a purchase or exchange would not be feasible, attempts would be made to enter into cooperative agreements to protect cultural/historical sites; threatened and endangered species habitat; and riparian habitat.

Unauthorized uses within the planning area would be resolved. If circumstances warrant the issuance of a permit, lease, or right-of-way authorizing the use could

occur. Disposal of the parcel through sale or exchange may be considered to resolve long-standing trespass.

### Utility/Transportation Systems

Public lands would be made available throughout the planning area for rights-of-way, permits, and leases. The planning area, with the exception of defined exclusion and avoidance areas, would be open to the consideration of granting of rights-of-way (reference ACEC and other special management area alternatives, Table 2-4 and Table 2-5). Right-of-way corridors would not be designated due to the predominate checkerboard private land pattern in the planning unit.

**TABLE 2-4**  
**RIGHTS-OF-WAY AVOIDANCE AND EXCLUSION AREAS**  
**(By Alternative)**

Area	Avoidance Areas				Exclusion Areas			
	Preferred Alt.	Alt. A	Alt. B	Alt. C	Preferred Alt.	Alt. A	Alt. B	Alt. C
Aboriginal Quarry Site (160 acres)	X	X	X	X				
Big Sandy River (¼ mile corridor)					X		X	X
Boar's Tusk	X	X	X	X				
Candidate Plants (3,110 acres)	X	X	X		X			X
Candidate Plants (35,540 acres)	X	X	X					X
Dry Sandy Swales (¼ mile buffer)	X	X		X				
Dry Sandy Swales (20 acres)					X	X		X
Dug Springs Stage Station(10 acres)					X			X
Emmons Cone	X	X	X	X				
14-Mile Recreation Area	X	X		X				
Historic Trails (¼ mile buffer)	X	X	X					

# ALTERNATIVES

TABLE 2-4 (Continued)

## RIGHTS-OF-WAY AVOIDANCE AND EXCLUSION AREAS (By Alternative)

Area	Avoidance Areas				Exclusion Areas			
	Preferred Alt.	Alt. A	Alt. B	Alt. C	Preferred Alt.	Alt. A	Alt. B	Alt. C
Historic Trails (½ mile buffer)				X				
Horse Herd Viewing Area	X	X	X	X				
I-80 Point of Rocks to Green River (limited to local service lines)	X	X	X	X				
LaBarge Bluffs Petroglyphs (½ mile radius)	X	X		X				
LaBarge Bluffs Petroglyphs (20 acres)					X	X		X
LaCiede Stage Station (10 acres)					X			X
Native American Burial Sites (2 acres)					X			X
North and South Table Mountains (1,280 acres)	X	X		X				
Pilot Butte	X	X	X	X				
Sage Grouse Leaks (¼ mile buffer)	X	X		X				
Sugarloaf Petroglyphs (½ mile radius)	X	X		X				
Sugarloaf Petroglyphs (20 acres)					X	X		X
Tolar Petroglyphs (½ mile radius)	X	X		X				
Tolar Petroglyphs (20 acres)					X	X		X
Tri-Territory Marker (10 acres)					X			X

Avoidance Area - areas where future rights-of-way may be granted only when no feasible alternative route or designated right-of-way corridor is available.

Exclusion Area - areas where future rights-of-way may be granted only when mandated by law.

# ALTERNATIVES

TABLE 2-5

## RIGHTS-OF-WAY AVOIDANCE AND EXCLUSION AREAS - SPECIAL MANAGEMENT AREAS (By Alternative)

Area	Avoidance Areas				Exclusion Areas			
	Preferred Alt.	Alt. A	Alt. B	Alt. C	Preferred Alt.	Alt. A	Alt. B	Alt. C
Candidate Plants (440 acres)	X	X	X		X			X
Candidate Plants (30,900 acres)	X	X	X					X
Cedar Canyon Petroglyphs (½ mile radius)	X	X	X	X				
Cedar Canyon Petroglyphs (20 acres)					X	X	X	X
Crookston Ranch (40 acres)	X	X	X	X				
Greater Sand Dunes ACEC (41,640 acres)	X	X	X	X				
Monument Valley (erosive soil areas and slopes >25%)	X			X				
Natural Corrals ACEC					X	X	X	X
Oregon Buttes ACEC (3,450 acres)	X	X	X	X				
Pine Butte (160 acres - existing candidate plants)		X	X	X	X			
Pine Springs (6,030 acres)	X			X				
Pine Springs (90 acres)		X						
Pine Springs (5,300 acres)			X					
South Pass Historic Viewshed (50,330 acres)	X			X				
South Pass Historic Landscape (87,580 acres)		X		X				

# ALTERNATIVES

TABLE 2-5 (Continued)

## RIGHTS-OF-WAY AVOIDANCE AND EXCLUSION AREAS - SPECIAL MANAGEMENT AREAS (By Alternative)

Area	Avoidance Areas				Exclusion Areas			
	Preferred Alt.	Alt. A	Alt. B	Alt. C	Preferred Alt.	Alt. A	Alt. B	Alt. C
South Pass Historic Landmark (5,260 acres)	X	X	X	X				
Steamboat Mountain ACEC (43,010 acres)	X			X				
Sweetwater River (¼ mile corridor): Wild and Scenic River Segments					X	X		X
Sweetwater River (¼ mile corridor): Recreational River Segments			X	X				
Tri-State ACEC	X			X				
Tri-State ACEC Currant Creek Drainage		X			X			X
Tri-State ACEC Sage Creek Drainage	X			X				
Tri-State ACEC Pine Mountain & Little Mountain								X
Tri-State Special Management Area (Red Creek ACEC)	X	X	X	X				
White Mountain Petroglyphs (½ mile radius)	X	X	X	X				
White Mountain Petroglyphs (20 acres)					X	X	X	X

Avoidance Area - areas where future rights-of-way may be granted only when no feasible alternative route or designated right-of-way corridor is available.

Exclusion Area - areas where future rights-of-way may be granted only when mandated by law.

## ALTERNATIVES

The ROD and *Federal Register* notice for the RMP would meet the criteria for public notification for linear or site rights-of-way as required by BLM Manual 7221. Site facilities or major linear rights-of-way along perennial streams which require an EIS would receive prior public notice unless such notice was given by another government agency (federal, state, or local).

The Aspen Mountain Communications Site Plan would govern development of sites at this location. Sites at other locations would be approved on a case-by-case basis. Advocate the sharing of sites where possible.

Major transportation and utility line rights-of-way would be confined to established ROW concentration areas. Areas designated as utility windows, ROW concentration areas, and existing communication sites would be preferred locations for future grants (Map8).

Windows ½ mile in width have been identified for the placement of utilities. The northern east-west window would be for underground facilities only, and the southern east-west windows will be for both above and below ground facilities. A ½ mile wide north-south window on

the west side of Flaming Gorge and a window south along Highway 430 have been identified for above and below ground utilities.

Rights-of-way and avoidance areas are described in Table 2-4 and Table 2-5 and shown on Map 9 and Map 10. An avoidance area for major utility lines would be located along I-80 between Point of Rocks and Green River. Due to topography, congestion in the concentration area, and surface mining, this area would be restricted to local distribution service lines. All other utilities would be located, if possible, in the northern-southern east-west windows.

### Withdrawals/Classifications

Withdrawals and classifications would be processed to afford protection to important resource values (Table 2-6). Withdrawals which no longer serve the purpose for which they were withdrawn would be revoked (Map 11 and Map 12). Prior to revocation, withdrawn lands would be reviewed to determine if any other resource values require withdrawal protection (Table 2-7).

**TABLE 2-6**  
**PROPOSED WITHDRAWALS BY ALTERNATIVE**  
**(Acres)**

Site	Preferred Alternative	Alternative A	Alternative B	Alternative C	Existing Withdrawal Overlap
Aboriginal Quarry Site	160	160	0	160	
Candidate Plants	3,110	0	0	3,110 <sup>1</sup>	Oilshale/ Coal
Cedar Canyon Petroglyph Site & ACEC	515	0	0	515	
Dug Springs Stage Station	10	0	0	10	Oilshale
Flaming Gorge Reservoir (BOR)	63	63	63	63	Oilshale/ Coal
Greater Sand Dunes ACEC	25,250	25,250	25,250	41,640	
LaBarge Bluffs Petroglyph Site	20	0	0	20	
LaCiede Stage Station	10	0	0	10	Oilshale
Monument Valley	0	0	0	43,600	Oilshale/ Coal
Pine Springs Expansion Area	730	0	0	730	Oilshale/ Coal
Public Water Reserve	9,386	9,386	9,386	9,386	

## ALTERNATIVES

TABLE 2-6 (Continued)

### PROPOSED WITHDRAWALS BY ALTERNATIVE (Acres)

Site	Preferred Alternative	Alternative A	Alternative B	Alternative C	Existing Withdrawal Overlap
South Pass Historic Landmark	5,260	0	0	5,260	Coal
Steamboat Mountain ACEC	243,010	0	0	43,010	Coal
Tolar Petroglyph Site	20	0	0	20	
Tri-State Monument: (Red Creek/Currant Creek Drainage)	73,800	0	0	79,600	Oilshale/ Coal
Tri-Territory Marker	10	0	0	10	Coal
<b>Totals</b>	<b>161,354</b>	<b>34,859</b>	<b>34,699</b>	<b>279,324</b>	

<sup>1</sup> An additional 39,320 acres of plant habitat may be withdrawn from mineral entry upon inventory (includes federal surface/federal minerals and private surface/federal minerals).

<sup>2</sup> Actual withdrawal acreage for Steamboat Mountain to be determined upon completion of leasing plan.

The Multiple Use Management Classification as it affects public lands in the planning area (200 acres) would be revoked.

Public Water Reserves would be terminated where no longer needed, and acquired where the need exists (21,368 acres canceled and 9,386 acquired acres) (Map 12).

### Desert Land Entries

If an applicant can provide evidence of a water right and provide an acceptable conservation plan which protects the soil resource and prevents salinity, the application for either a desert land entry or for an agricultural lease would be considered on its merits. Otherwise, all public lands in the planning area would be considered unsuitable for and closed to agricultural use under Desert Land Entry (DLE) and agricultural leases would be managed to reduce the salinity and sedimentation of the Green River Basin. Desert Land Entries and agricultural leases must meet the criteria outlined in Appendix 8-2.

### Access

Access to public lands would be provided throughout the planning area. Access would be closed, or restricted, where necessary, in specific areas to protect

public health and safety with significant resource values in accordance with ORV proposed designations (see ORV Management discussion). Easements would be acquired to provide access to public lands for recreational, wildlife, range, cultural/historical, mineral, ACEC, special management area, and other resource needs (Table 2-8 and Map 13).

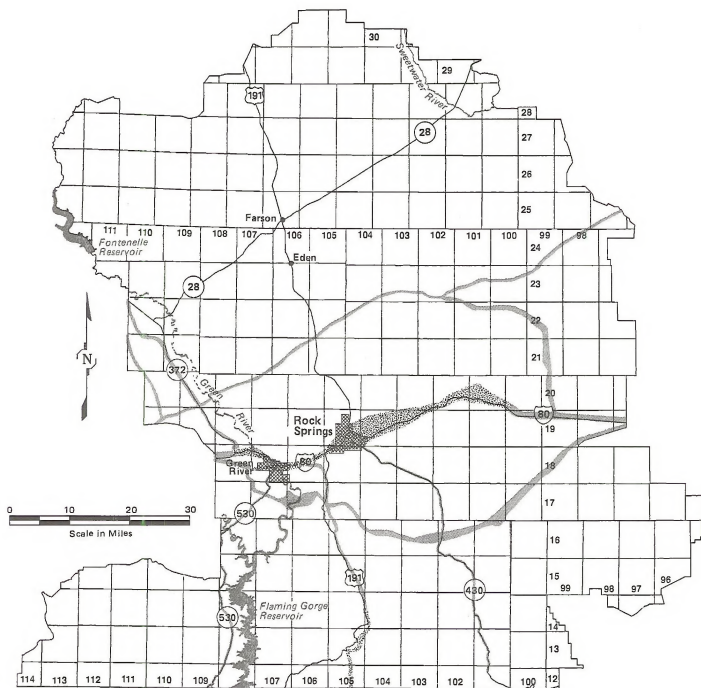
Placement of advertising signs on public lands adjacent to county roads, or roads on the BLM Transportation Plan, shall meet the criteria for sign placement on federal or state highways.

See other resource management prescriptions in this document for other restrictions that may apply to lands and realty management activities.

### Livestock Grazing Management

**MANAGEMENT OBJECTIVE:** The objective for livestock grazing management would be to improve forage production and ecological conditions for the benefit of livestock use, wildlife habitat, watershed, and riparian areas.

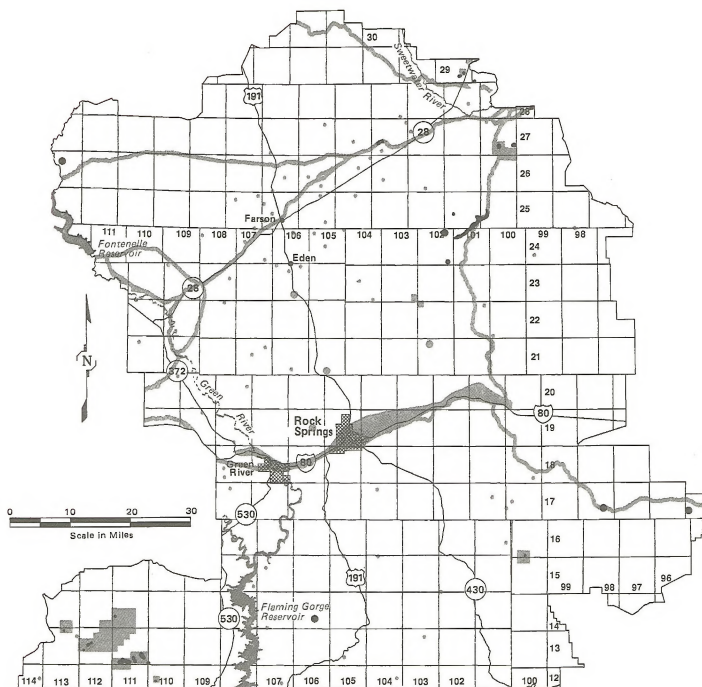
**MANAGEMENT ACTIONS:** Authorized grazing use would not exceed the recognized active grazing preference (318,647 AUMs).



Existing Corridor  
Avoidance Area

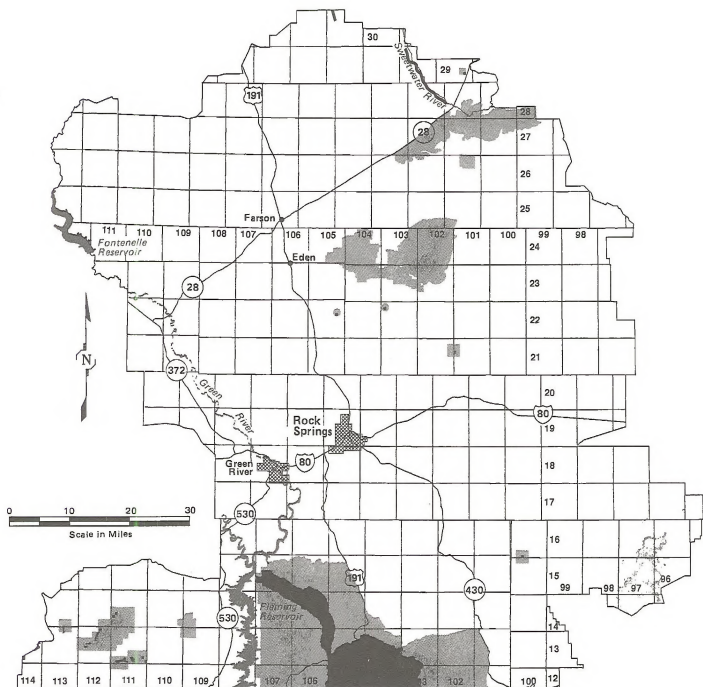
**Map 8**  
Preferred Alternative  
and Alternatives B and C  
Major Utility Lines,  
Concentration Areas,  
and Communication Sites  
Green River Planning Area





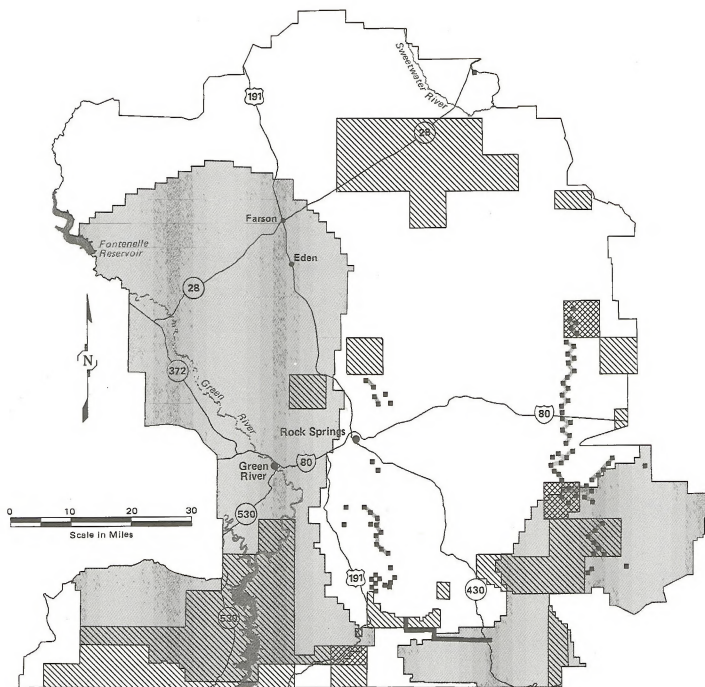
Exclusion Area  
 Avoidance Area





Map 9  
 Preferred Alternative  
 Rights-of-Way Exclusion  
 and Avoidance Areas  
 Green River Planning Area



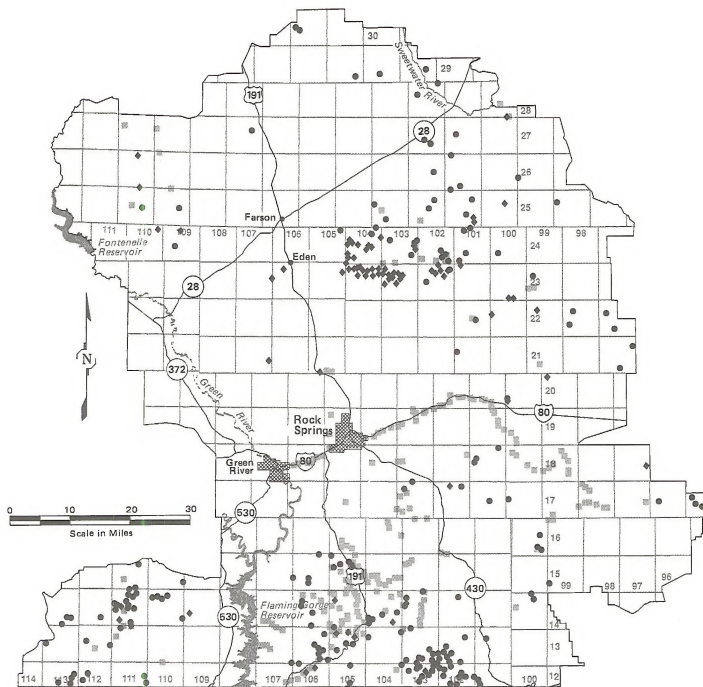
Avoidance Area  
 Exclusion Area

**Map 10**  
**Preferred Alternative**  
**ROW Avoidance or Exclusion Areas in**  
**Special Management Areas**  
**Green River Planning Area**



-  Oil Shale Withdrawal
-  Coal Withdrawal
-  Phosphate Withdrawal
-  Stock Driveway

**Map 11**  
**Existing Withdrawals**  
 Green River Planning Area



- ◆ Recommended for Retention
- Recommended for Addition
- Recommended for Revocation

**Map 12**  
**Public Water Reserves**  
 Green River Planning Area

# ALTERNATIVES

TABLE 2-7

## WITHDRAWALS TO BE REVOKED OR RETAINED (approximate acres)

Withdrawal	Preferred Alternative	Alternative A	Alternative B	Alternative C
<b>Revoked:</b>				
Classification Withdrawal	1,080,600	—	1,080,600	1,080,600
Coal Withdrawal	375,828	—	375,828	375,828
Multiple Use Management Classification	200	—	200	200
Oil Shale Withdrawal	2,428,808	—	2,428,808	2,428,808
Phosphate Withdrawal	14,787	—	14,787	14,787
Public Water Reserves	21,368	—	21,368	21,368
Stock Driveways	37,111	—	37,111	37,111
<b>Retained:</b>				
BLM Rock Springs Administrative Site	14	14	14	14
14-Mile Recreation Site	20	20	20	20
Natural Corrals Archeological Site	357	357	357	357
Oregon Trail/Parting of the Ways	520	—	520	520
Pine Springs Archeological Site	90	90	90	90
Public Water Reserves	4,240	4,240	4,240	4,240
Sugarloaf Petroglyphs	5	5	5	5
White Mountain Petroglyphs	20	20	20	20
Classification Withdrawal	—	1,080,600	—	—
Coal Withdrawal	—	375,828	—	—
Multiple Use Management Classification	—	200	—	—
Oil Shale Withdrawal	—	2,428,808	—	—
Phosphate Withdrawal	—	14,787	—	—
Public Water Reserves	—	25,608	—	—
Stock Driveways	—	37,111	—	—

Note: Approximately 500,000 acres of withdrawals overlap.

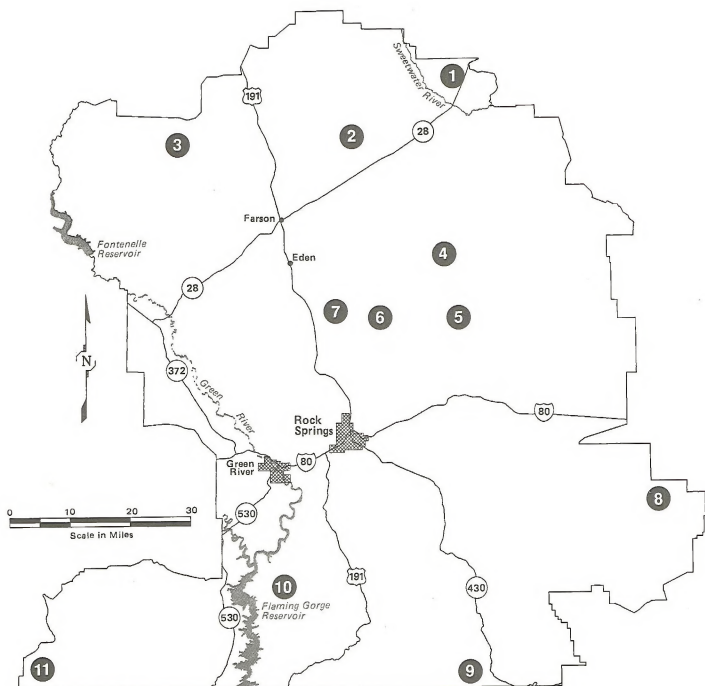
The present kind and season of use would continue to be licensed. Permitting for livestock grazing would continue until monitoring, negotiation, or a change in resource conditions indicate that a modification is needed. Livestock grazing would be managed on 31 I category allotments, 18 M category, and 29 C category Allotments (Appendix 9-1), and one allotment would not be categorized.

Interdisciplinary monitoring studies would be conducted at a level sufficient to detect changes in grazing use, trend, and range conditions and to determine if vegetation objectives would be met for all affected uses (livestock grazing, wild horses, wildlife, etc.).

TABLE 2-8  
ACCESS NEEDS

Road/Area Identification	Road Names	Land Location	Benefitting Resource						
			Ownership	Minerals	Range	Wildlife	Forestry	Recreation	Lands
1	Pine Creek	secs. 19-20, 22, 27, 30, T. 29 N., R. 101 W.	Private		X	X		X	X
2	Prospect Mountain	sec. 23, T. 27 N., R. 104 W. sec. 8, T. 28 N., R. 104 W.			X	X		X	X
3	Little Colorado	sec. 36, T. 27 N., R. 109 W.	State		X	X		X	X
4	Bush Rim	sec. 36, T. 24 N., R. 102 W.	State		X	X		X	X
5	Natural Corrals	sec. 19, T. 21 N., R. 101 W. sec. 13, T. 21 N., R. 102 W.	Private						
6	Cedar Canyon Petroglyphs	secs. 1, 13, 15, 19, 21, 23, T. 22 N., R. 104 W. secs. 7, 17, 19, 21, T. 22 N., R. 103 W.		Private	X	X	X		X
7	White Mountain Petroglyphs	sec. 19, T. 22 N., R. 104 W. sec. 13, T. 22 N., R. 105 W.	Private	X	X	X		X	X
8	Fort LaCiede/ Dug Springs	secs. 19, 21, 25, 27, T. 17 N., R. 98 W. secs. 13, 21, 23, 29 T. 17 N., R. 97 W. secs. 13, 19, 21, 23, T. 17 N., R. 96 W. sec. 19, T. 17 N., R. 95 W.	Private	X	X	X		X	X
9	Canyon Creek	secs. 17-18, T. 12 N., R. 101 W. secs. 13, 22, T. 12 N., R. 102 W.	Private		X	X		X	X
10	Currant Creek	sec. 35, T. 15 N., R. 107 W. secs. 1-2, T. 14 N., R. 107 W. secs. 4-6, 8-10, T. 14 N., R. 106 W.	Private	X	X	X		X	X
11	Hickey Mountain	secs. 21-23, T. 12 N., R. 114 W. sec. 24, T. 13 N., R. 114 W	Private	X		X	X	X	X

ALTERNATIVES



9 Access Number

Map 13  
**Road Access Needs**  
 Green River Planning Area



## ALTERNATIVES

Livestock grazing would not be authorized in the 970-acre Palmer Draw area and special management exclosures. AUMs currently authorized in these areas would be suspended. All developed and semi-developed recreation areas would be closed to livestock grazing and would be fenced to reduce conflicts between uses. Authorized grazing preference may be reduced in areas with excessive soil erosion and poor range condition, if allotment evaluation warrants such a change or if necessary to provide forage for wildlife, wild horse, and recreational use.

Management would be implemented in "I" category allotments to maintain or improve wild horse, wildlife, watershed, and soils values. Management in "M" category allotments would be directed toward maintenance of these values.

Riparian habitat would be maintained, improved, or restored to enhance forage conditions, provide wildlife habitat, and improve stream quality. Where possible, additional riparian area acreage would be acquired to enhance livestock and riparian area management.

The goal for riparian area management would be to achieve a proper functioning condition of 75 percent or more of riparian areas in 10 years.

New AMPs would be written and implemented for some I category allotments, and existing AMPs for I category allotments would be modified as needed. All new and existing AMPs would incorporate desired plant community objectives and riparian objectives where such resources exist. Existing AMPs for M category allotments would not be modified unless monitoring and evaluation indicate a change in management is needed or riparian objectives are necessary. Riparian objectives would also be developed for C category allotments where riparian values exist. New AMPs or activity plans would require environmental analysis. Grazing systems would be designed to maintain or improve plant diversity and would be implemented on all I category allotments.

Management actions identified in the Rangeland Program Summary Update (1990) would continue to be implemented. Appendix 9-2 contains a list of necessary management actions for I category allotments. Appendix 9-3 contains a list of necessary management actions for all other allotments.

A grazing plan that considers wildlife needs would be developed for Pine Canyon, Long Canyon, Cedar Canyon, and the Table Mountain area to alleviate conflicts between oil and gas production and exploration, wildlife, and livestock grazing.

Cooperative allotment management plans prepared in coordination with other agencies, such as the Forest Service and Soil Conservation Service, would be consistent with this land use plan.

The current authorized active livestock use and existing forage reservations for wildlife and wild horses would be maintained. Existing rangeland monitoring would continue and additional rangeland monitoring would be initiated to determine the need for forage allocation adjustment.

Unallotted forage on public land (15,100 acres) scattered throughout the planning area would be allocated on a case-by-case basis after consideration would be given to all resource management objectives. The number of AUMs to be allocated would be determined after the lands have been evaluated. Forage increases would be evaluated in a site specific analysis and considered for allocation on a case-by-case basis.

Salt blocks for livestock would not be placed within 500 feet of live water, wetlands, or riparian areas unless analysis shows that it would be acceptable. Salt blocks would not be placed on areas inhabited by candidate plant species.

New range improvements would be implemented in "I" and "M" category allotments (Appendix 9-4 (Map C)). Before expenditure of government funds for range improvement project construction, a cost/benefit analysis would be conducted on an allotment or project basis. Maintenance of new and existing range improvements would be required in accordance with the BLM Rangeland Improvement Policy. Range improvements would be directed at resolving or reducing resource concerns, improvement of wetland/riparian areas, and overall improvement of vegetation/ground cover.

Vegetation manipulation projects would be conducted to reach multiple use objectives and would involve site specific environmental analysis and coordination. Prescribed fire would be the preferred method of vegetation manipulation. Funds for vegetation manipulation in I category allotments would be provided by the BLM, other state or federal agencies, and private sources.

Vegetation treatment would be used to remove decadent stands of brush in specific areas (approximately 67,700 acres). Approximately 26,700 acres of vegetative removal would be designed to increase livestock forage, while the remaining 41,100 acres would primarily be designed to improve wildlife habitat. Prescribed fire would be the preferred method of vegetation manipulation, and spring burns would be preferred to re-



## ALTERNATIVES

generate shrubs. Chemical treatment would be used only where national guidelines can be exercised to prevent unwanted destruction of desirable fauna or flora and to prevent transportation of these chemicals to other areas by water or air movement (Appendix 9-5).

Water sources would be developed in crucial wildlife winter ranges only when consistent with wildlife habitat needs. Such sources would be designed to benefit livestock and wildlife. Alternative water supplies or facilities for livestock may be provided to relieve grazing pressure along stream bottoms and improve distribution.

Fence construction in big game use areas and known migration routes would require site specific analysis. Introduction of herder control would be encouraged as an alternative to fencing. All constructed fences would follow construction standards and design (BLM Manual 1740) and would be located and designed to not impede wild horse movement. Construction of approximately 27 miles of fence would be considered to meet management objectives. Fences on public lands would be removed, modified, or reconstructed if documented wildlife conflicts occur.

Combining and splitting allotments would be considered when such action would help meet plan objectives. The Henrys Fork allotment would be split into 3 allotments and managed by the guidelines of revised AMPs. The Cottonwood Creek and Antelope Wash allotments would be consolidated into one two-pasture allotment and managed by the guidelines of a new AMP.

Requests for conversions of livestock kind and authorized season of use would be considered on a case-by-case basis following environmental analysis. Such changes would be consistent with wildlife, wild horse, watershed, and riparian objectives. Candidate species and vegetation objectives would be considered before allowing livestock conversions, and all conversions would be consistent with available forage.

Noxious weed infestations would be controlled through livestock management or by environmentally acceptable mechanical, chemical, or biological means in cooperation with County weed and pest districts (Appendix 9-5).

Stock driveway withdrawals numbers 4, 21, and 23 would be revoked.

See other resource management prescriptions in this document for other restrictions that may apply to livestock grazing management activities.

## Minerals Management

**MANAGEMENT OBJECTIVE:** The objective for management of the minerals program would be to maintain or enhance opportunities for mineral exploration and development.

### Leasable Minerals

#### Fluids

**MANAGEMENT OBJECTIVE:** The objective for management of oil and gas resources would be to provide for leasing, exploration, and development of oil and gas, while protecting other values.

**MANAGEMENT ACTIONS:** Table 2-9 lists lands in the planning area with oil and gas lease restrictions necessary to protect other resource values. All WSAs, Seedskaadee Wildlife Refuge, and incorporated cities and towns would remain closed to leasing. These are non-discretionary closures in accordance with 43 CFR 3100. Additional no leasing areas would include 440 acres of candidate plant species locations, certain parts of the Red Creek ACEC, certain stretches of the Big Sandy and Sweetwater rivers and a 1/4 mile buffer, and the proposed Steamboat Mountain ACEC. Approximately 331,020 acres of BLM-administered mineral estate would not be available for oil and gas leasing.

The remainder of the planning area would be open to consideration for oil and gas leasing with restrictions that would apply to certain areas. Types of resource values that would be protected by a no surface occupancy limitation would include: cultural, historic, and recreation sites; certain ACECs; areas proposed for inclusion in the Wild and Scenic River System; some topographic features; high value watershed areas; the wild horse viewing area; candidate plant species locations and habitat (2,670 acres); wildlife areas; the Rock Springs expansion area; and sensitive soils and slopes greater than 25 percent in the Red Creek ACEC. About 300,000 acres would be available for lease with a no surface occupancy restriction.

Seasonal restrictions would be placed on about 1,842,980 acres of certain big game winter ranges, calving or parturition areas, sage grouse nesting areas, raptor habitat, and game fish spawning areas (Table 2-10).

# ALTERNATIVES

TABLE 2-9

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres) PREFERRED ALTERNATIVE

Category	Surface Ownership	Hydrocarbon Potential			
	Federal Acres	(Federal High	Surface and Moderate	Subsurface Low	Acres) Total
No Leasing					
Big Sandy River and 1/4 mile buffer (1.5 miles )	240	0	0	240	240
Candidate plant localities (to the nearest 40-acre parcel) <sup>1</sup>	440	110	100	240	450
Incorporated Cities and Towns (Rock Springs, Green River, and Superior)	3,770	2,700	0	3,090	5,790
Red Creek ACEC (part) <sup>2</sup>	50,120	18,890	10,310	24,520	53,720
Seedskaadee National Wildlife Refuge <sup>3</sup>	13,360	9,960	4,090	0	14,050
Steamboat Mountain ACEC <sup>4</sup>	43,010	43,950	0	0	43,950
Sweetwater River and ¼ mile buffer (Wild and Scenic part)	1,460	0	0	1,460	1,460
WSAs	225,110	134,540	14,310	76,560	225,410
Total No Leasing	337,510	210,150	28,810	106,110	345,070
No Surface Occupancy (NSO) <sup>5</sup>					
14-Mile Recreation Area	20	20	0	0	20
Aboriginal Quarry	160	0	0	160	160
Big Sandy River and ¼ mile buffer	240	0	0	240	240
Boar's Tusk	90	90	0	0	90
Candidate plant species habitat <sup>1</sup>	3,110	2,700	0	430	3,130
Candidate plant species potential habitat <sup>6</sup>	36,550	4,520	16,790	19,010	40,320
Cedar Canyon, LaBarge, Sugarloaf, Tolar, and White Mountain Petroglyphs + ½ mile radius	2,260	1,260	500	500	2,260
Crookston Ranch	40	40	0	0	40

# ALTERNATIVES

TABLE 2-9 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres) PREFERRED ALTERNATIVE

Category	Surface Ownership	Hydrocarbon Potential			
	Federal Acres	(Federal High	Surface and Moderate	Subsurface Low	Acres) Total
Currant Creek Drainage	23,740	0	2,820	21,200	24,020
Dry Sandy Swales	20	0	0	20	20
Emmons Cone	60	60	0	0	60
Floodplains <sup>7</sup>	94,660	20,590	31,470	42,640	94,700
Greater Sand Dunes ACEC - within Buffalo Hump and Greater Sand Dunes WSA, developed recreation sites, and ORV parking lot <sup>8</sup>	23,900	19,250	4,650	0	23,900
LaCleda and Dug Springs Stage Stations	20	20	0	0	20
Native American Burials	2	2	0	0	2
Natural Corrals ACEC	1,115	1,270	0	0	1,270
North and South Table Mountains	1,280	1,280	0	0	1,280
Oregon Buttes ACEC	3,450	0	0	3,450	3,450
Pilot Butte	120	0	0	120	120
Pine Butte	320	320	0	0	320
Pine Springs ACEC	90	0	0	90	90
Pine Springs ACEC Expansion	6,030	0	0	6,030	6,030
Raptor nesting (cliffs, bluffs, roosts, outcrops and pinnacles)	890	640	130	130	900
Red Creek on slopes >25% and on sensitive soils	50,120	18,890	10,310	24,520	53,720
Rock Springs-Green River Expansion Area (new area) <sup>9</sup>	26,600	13,860	6,570	10,510	30,940
Sage Grouse Leks and ¼ mile buffer	8,170	1,420	4,410	2,660	8,490
South Pass Historic Landmark	5,260	0	0	5,420	5,420

# ALTERNATIVES

TABLE 2-9 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres) PREFERRED ALTERNATIVE

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
South Pass Historic Landscape (area visible within 1-mile buffer of Lander Cutoff and area visible within 3-mile buffer of Oregon Trail)	50,330	0	1,220	50,760	51,980
Steamboat Mountain ACEC <sup>4</sup>	43,010	43,950	0	0	43,950
Sweetwater River and ¼ mile buffer	930	0	0	930	930
Tri-Territory Marker	10	10	0	0	10
Wild horse herd viewing area + ½ mile buffer	500	0	500	0	500
<b>Total No Surface Occupancy<sup>10</sup></b>	<b>299,740</b>	<b>126,560</b>	<b>37,430</b>	<b>105,790</b>	<b>269,780</b>
<b>Seasonal Restrictions<sup>5</sup></b>					
Crucial Antelope Winter Range	817,640	268,740	335,370	241,780	845,890
Crucial Deer Winter Range	676,830	330,630	74,590	300,690	705,910
Crucial Elk Winter Range	345,590	182,870	40,280	128,000	351,150
Crucial Moose Winter Range	33,270	8,770	6,500	23,080	38,350
Elk Calving Areas	85,830	55,610	6,130	26,330	88,070
Game Fish Spawning Areas (miles)	210	30	80	140	250
Moose Parturition Areas	410	0	0	410	410
Mule Deer Parturition Areas	40,880	21,690	0	19,010	40,700
Raptor Habitat	260,020	207,160	42,040	46,830	296,030
Sage Grouse Nesting Areas (1¼ mile from lek)	447,170	110,740	218,770	131,840	461,350
<b>Total Seasonal Restrictions<sup>10</sup></b>	<b>1,668,440</b>	<b>820,120</b>	<b>367,080</b>	<b>655,780</b>	<b>1,842,980</b>
<b>Surface Disturbance Restrictions<sup>5</sup></b>					
Continental Divide Snowmobile Trail (¼ mile buffer)	2,330	0	0	2,330	2,330

# ALTERNATIVES

TABLE 2-9 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres) PREFERRED ALTERNATIVE

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
Current Creek Drainage	23,740	0	2,820	21,200	24,020
Floodplains (500' buffer) <sup>7</sup>	153,320	33,370	65,700	58,250	157,320
Greater Sand Dunes ACEC <sup>8</sup>	70,850	58,600	13,190	0	71,790
Highly erodible soils	158,110	62,390	34,390	63,100	159,880
Historic Trails (¼ mile or visual horizon) <sup>11</sup>	100,210	43,720	26,700	29,420	99,840
Monument Valley	64,300	64,300	0	0	64,300
Recreation sites + ¼ mile buffer	930	330	130	470	930
Red Creek ACEC (modified)	50,120	18,890	10,310	24,520	53,720
Sage Creek Watershed	52,670	6,660	32,450	13,850	52,960
Slopes greater than 25%	198,720	89,210	31,410	68,320	188,940
Steamboat Mountain Crucial Overlap <sup>4</sup>	27,000	27,000	0	0	27,000
Superior Recharge (modified) <sup>12</sup>	7,120	8,180	0	0	8,180
View from Fontenelle Reservoir	120	220	0	0	220
VRM Class II Lands	497,900	186,280	26,340	300,400	513,020
Within 100' of inner gorge of intermittent/ ephemeral streams	7,170	4,130	920	2,500	7,550
Within ¼ mile of Big Sandy River	240	0	0	240	240
Within ¼ mile of Sweetwater River	930	0	0	930	930
<b>Total Surface Disturbance Restrictions<sup>10</sup></b>	<b>1,228,080</b>	<b>636,750</b>	<b>180,830</b>	<b>631,610</b>	<b>1,481,980</b>

<sup>1</sup> As new populations are identified, their locations would be added to this total.

<sup>2</sup> Areas that have been identified as containing 1) highly erosive soils, 2) areas subject to slumping, 3) slopes greater than 25 percent, and 4) riparian areas.

<sup>3</sup> This RMP will not make decisions for the management of federal minerals on this area.

## ALTERNATIVES

### TABLE 2-9 (Continued)

#### AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres) PREFERRED ALTERNATIVE

<sup>4</sup> All expiring leases would be withheld until a leasing plan could be developed to identify any areas suitable for surface occupancy. Existing leases held by production would be honored and would be allowed to continue operation under existing lease stipulations. Conditions of Approval could be added to these stipulations to protect the elk herd. In the remainder of the crucial winter range and parturition areas outside the ACEC, only progressive development of one or two areas could occur simultaneously. Satisfactory abandonment and reclamation of an area or field would be required prior to development of additional areas.

<sup>5</sup> Refer to Appendix 2, "BLM Standard Mitigation Guidelines."

<sup>6</sup> Searches would be required prior to surface disturbance activities.

<sup>7</sup> These acreage figures are based on Housing and Urban Development maps and are not complete for entire resource area.

<sup>8</sup> The number of producing or temporarily shut-in wells would not exceed 3 per section in the existing developed area, while only one well per section would be allowed in the undeveloped area. Additional wells would be allowed if the authorizing officer determines that ACEC values would be retained. Construction within 1 mile or the visual horizon of the ACEC, would consider alternatives to reduce objectionable visible profile from the ACEC.

<sup>9</sup> A leasing plan would be prepared and would consider lease parcel design, allow for consultation with local communities, and provide direction to protect public health and safety.

<sup>10</sup> The numbers do not total because areas of restriction overlap. Where they do overlap, the area of overlap is only counted once.

<sup>11</sup> All activity would conform with requirements of Class II visual values.

<sup>12</sup> The Ericson Formation recharge area, for the town of Superior sole source aquifer and overlying formations, would be protected through the use of mitigation.

### TABLE 2-10

#### SEASONAL RESTRICTIONS FOR ALL SURFACE DISTURBANCE ACTIVITIES

Affected Areas	Restriction	Restricted Area
Big Game Crucial Winter Ranges	Nov. 15 - April 30	Antelope, elk, moose, and mule deer crucial winter ranges
Parturition Areas	May 1 - June 30	Designated parturition areas
Sage Grouse Leks and Nesting Areas	Feb. 1 - July 31	Up to 2-mile radius of lek
Golden Eagle Nest	Feb. 1 - July 31	Within one-half mile radius
Osprey Nest	Feb. 1 - July 31	Within one-half mile radius
Swainson's Hawk Nest	Feb. 1 - July 31	Within one-half mile radius
Ferruginous Hawk Nest	Feb. 1 - July 31	Within one mile radius
Coopers Hawk Nest	Feb. 1 - July 31	Within one-half mile radius
Burrowing Owl Nest	Feb. 1 - July 31	Within one-half mile radius
Merlin Nest	Feb. 1 - July 31	Within one-half mile radius
Other Raptors	Feb. 1 - July 31	Within one-half mile radius
Game Fish Spawning Areas	Spring spawning Fall spawning	Determined on case-by-case basis.

## ALTERNATIVES

Mineral exploration and development activities would be restricted where appropriate to protect the following types of resource values: all cultural sites and historic trails, historic sites, certain visual resources, soils and watershed, all slopes greater than 25 percent, recreation sites, the recharge area of the Superior water supply, certain ACECs, and proposed Wild and Scenic River segments. Surface disturbance restrictions would be placed on 1,428,950 acres.

Maps 14, 15, 16, and 17 shows those portions of the planning area where no leasing would be applied and areas where occupancy and activities would be limited.

### Geothermal

**MANAGEMENT OBJECTIVES:** Although no geothermal resources are known within the planning area, the resource management objective is to maintain opportunities for geothermal exploration and development.

**MANAGEMENT ACTIONS:** Geothermal resources are available for leasing in areas that are open to oil and gas leasing. Areas closed to oil and gas leasing are also closed to geothermal leasing.

Exploration and development of geothermal resources are subject to application of restrictions on surface-disturbing activities and other restrictions in the same manner as they are applied to oil and gas exploration and development activities.

### Solid Leasables (Coal)

The Federal coal management options for this (the preferred) alternative were derived through comparing the coal screening process applications and the impact analyses of the No Action Alternative and Alternatives B and C. Based on these comparisons, the coal management options that provided the best mix and balance with the other land and resource uses in the planning area were selected. See Appendix 3-2 for a complete explanation of how the coal screening process was conducted and how the coal screening results were applied for each alternative in this RMP EIS.

**MANAGEMENT OBJECTIVES:** The objectives for management of the federal coal resources in the planning area would be to provide for both short and long-range development of federal coal, in an orderly and timely manner, consistent with the policies of the federal coal management program, environmental integrity, national energy needs, and related demands.

**MANAGEMENT ACTIONS:** With appropriate limitations and mitigation requirements for the protection of other resource values, all BLM-administered public lands and Federal coal lands in the Green River planning area, except for those identified in Table 2-11, would be open to coal resource inventory and exploration to help identify coal resources and their development potential.

TABLE 2-11

### AREAS CLOSED TO COAL EXPLORATION AND SODIUM PROSPECTING (by alternative)

Area	Preferred Alternative	Alternative A	Alternative B	Alternative C
14-Mile Recreation Area	20	20	20	20
Aboriginal Quarry	160	160	160	160
Big Sandy River (¼ mile buffer)	240	0	240	240
Big Sandy River (500' buffer)	0	100	0	0
Boar's Tusk	90	90	90	90
Candidate Plant Species Sites	3,110	3,110	3,110	3,110
Cities and Towns (1-mile radius)	0	0	0	20,740
Concentrated Population Areas	0	12,130	0	0
Crookston Ranch 400400				
Crookston Ranch (½ mile buffer)	0	500	0	500
Currant Creek Drainage	23,740	23,740	0	23,740
Dry Sandy Swales	20	20	20	20
Emmons Cone	60	60	60	60



# ALTERNATIVES

TABLE 2-11 (Continued)

## AREAS CLOSED TO COAL EXPLORATION AND SODIUM PROSPECTING (by alternative)

Area	Preferred Alternative	Alternative A	Alternative B	Alternative C
Floodplains (including Salt Wells Creek/Bitter Creek)	96,795	0	0	96,795
Salt Wells and Bitter Creek Floodplains	0	0	2,135	0
Green River City Limits	0	4,500	4,500	0
Historic Mining Town of Gibraltar	0	0	0	30
Historic Mining Town of Gunn	0	0	0	10
Historic Mining Town of Halville	0	0	02	50
Interstate Highway 80	558	0	558	558
Incorporated Cities and Towns	3,770	3,770	3,770	3,770
LaCiede and Dug Springs Stage Stations	20	20	20	0
LaCiede and Dug Springs Stage Stations (½ mile buffer)	0	0	0	760
Monument Valley (steep slopes and highly erosive soils)	0	0	0	1,390
Native American Burials	2	2	2	2
Natural Corrals ACEC	1,115	1,115	0	1,115
Natural Corrals ACEC (Section 18)	0	0	640	0
North and South Table Mountains	1,280	1,280	0	1,280
North Fork Vermillion Creek (440 acres)	440	0	440	440
Oregon Buttes ACEC	3,450	3,450	3,450	3,450
Overland Trail (portions on BLM- administered land)	0	0	0	1,280
Parting of the Ways	0	40	40	40
Petroglyphs: Cedar Canyon				
Petroglyphs NRHP Site	0	20	20	0
Petroglyphs: Cedar Canyon ACEC	0	0	0	2,550
Petroglyphs: Cedar Canyon, LaBarge, Sugarloaf, Tolar, and White Mountain (½ mile radius)	2,260	0	0	0
Petroglyphs: LaBarge, Sugarloaf, and Tolar	0	60	60	0
Petroglyphs: LaBarge, Sugarloaf, and Tolar (½ mile radius)	0	0	0	1,500
Petroglyphs: Pine Canyon Petroglyphs	0	0	0	1,280
Petroglyphs: White Mountain Petroglyphs ACEC	0	20	20	0
Petroglyphs: White Mountain Petroglyphs ACEC (½ mile buffer)	0	0	0	500
Pilot Butte	120	120	120	120
Pine Butte	320	320	0	320
Pine Springs ACEC and Expansion	6,120	0	0	6,120
Pine Springs ACEC	0	90	90	0
Potential Candidate Plant Species Habitat	36,550	36,550	0	36,550
Raptor Nesting	890	890	890	890
Red Creek ACEC	0	0	0	55,880
Red Creek (slopes >25%)	50,120	0	0	0
Riparian Areas, Wetlands, and Floodplains	0	0	0	95,550
Rock Springs-Green River Expansion Area	26,600	0	0	26,600



## ALTERNATIVES

### TABLE 2-11 (Continued)

#### AREAS CLOSED TO COAL EXPLORATION AND SODIUM PROSPECTING (by alternative)

Area	Preferred Alternative	Alternative A	Alternative B	Alternative C
Rock Springs Expansion Area	0	15,740	0	0
Sage Grouse Leaks (¼ mile buffer)	8,170	8,170	0	8,170
Sand Dunes ACEC (Outside WSA)	0	14,150	0	0
Sand Dunes ACEC	0	0	0	38,650
South Pass Historic Landmark	5,260	0	0	0
South Pass Historic Landscape	33,000	0	0	50,330
Steamboat Mountain Area	43,010	0	0	43,010
Superior Recharge	1,864	3,660	1,864	3,660
Sweetwater River (¼ mile buffer)	1,460	0	1,460	1,460
Sweetwater River (500' buffer)	0	550	0	0
Tri-Territory Marker	10	0	0	10
Unacceptable	0	9,000	0	0
Unsuitable	028,60000			
Union Pacific Railroad	509	0	509	509
Wild Horse Herd Viewing Area (½ mile buffer)	500	0	0	0
Wild Horse Herd Viewing Area	0	2	0	0
Wild Horse Herd Viewing Area (½ mile radius)	0	0	500	0
Wild Horse Herd Viewing Area (2-mile radius)	0	0	0	8,040
Wilderness Study Areas	172,000	172,000	172,000	172,000

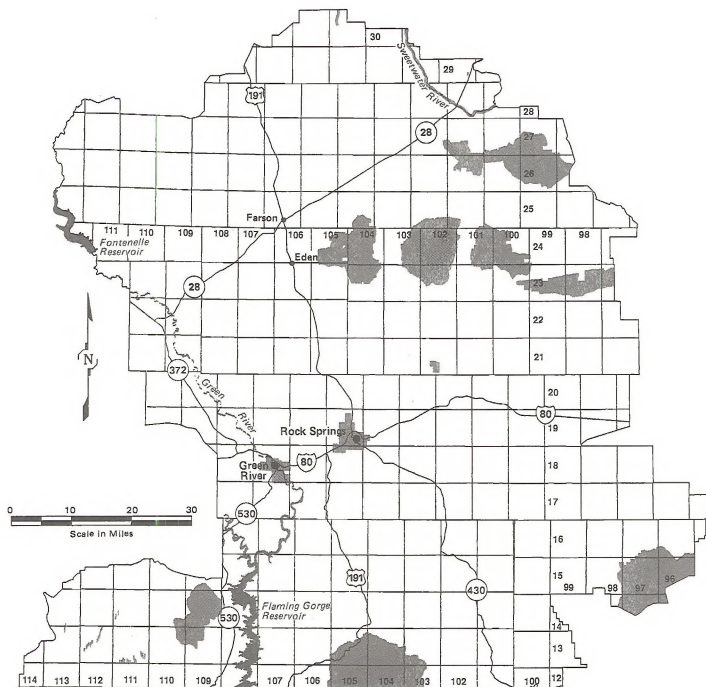
About 463,000 acres of federal coal lands within the Coal Occurrence and Development Potential area (see Map 18) would be open to further consideration for coal leasing and development (i.e., new competitive leasing,

emergency leasing, lease modifications, and exchange proposals, under the Federal Coal Management Program) with appropriate and necessary conditions and requirements for protection of other land and resource values and uses (Table 2-12).

### TABLE 2-12

#### SUMMARY DESCRIPTION OF COAL SCREENING PROCESS RESULTS AND COAL MANAGEMENT ACTIONS (Preferred Alternative)

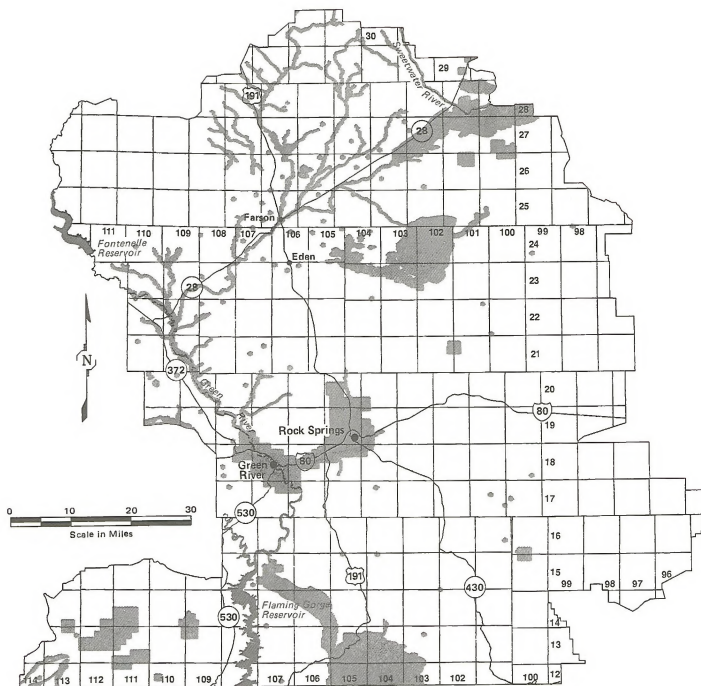
Coal Screening Process Results	Federal Coal Lands (acres)
Total Federal Coal Development Potential Area	475,700
Leased Federal Coal Lands (not evaluated)	30,200
Federal Coal Lands Unsuitable for (closed to) Leasing Consideration	12,600
Federal Coal Lands Unacceptable for (closed to) Leasing Consideration	405
<b>Coal Management Actions</b>	
Remaining Federal Coal Lands Acceptable for Leasing Consideration	462,600
Portion Subject to No Surface Occupancy Restriction	49,562
Portion Subject to No Surface Mining Restriction and Limited Surface Facilities Restriction	13,042



0 10 20 30  
Scale in Miles

 No Lease Area

**Map 14**  
**Preferred Alternative**  
**No Lease Areas**  
**Green River Planning Area**



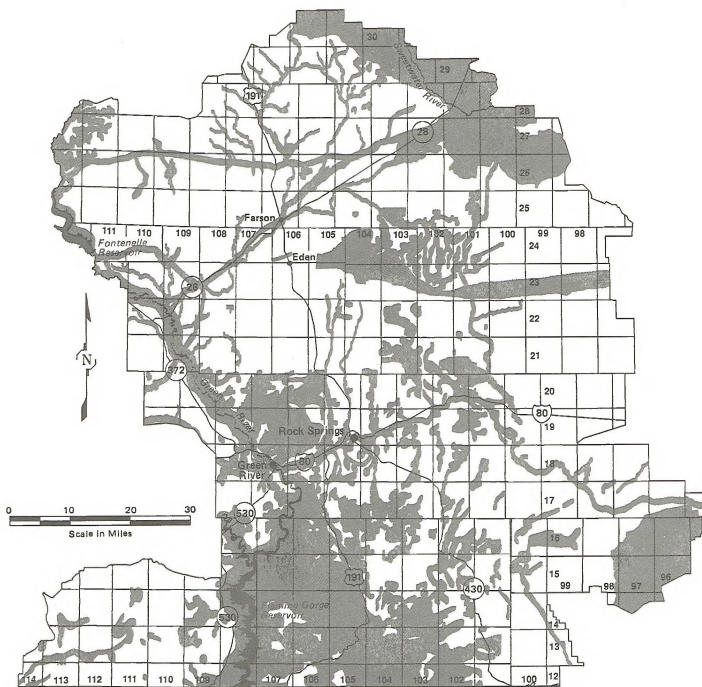
 No Surface Occupancy Area

**Map 15**  
**Preferred Alternative**  
**No Surface Occupancy Areas**  
**Green River Planning Area**



Seasonal Restriction Area

**Map 16**  
**Preferred Alternative**  
**Seasonal Restriction Areas**  
**Green River Planning Area**



Surface Disturbance Restriction Area

**Map 17**  
**Preferred Alternative**  
**Lease with Surface**  
**Disturbance Stipulations**  
**Green River Planning Area**



**Map 18**  
**Coal/Sodium Potential**  
**Green River Planning Area**



## ALTERNATIVES

These 463,000 acres would be subject to continued field investigations, studies and evaluations to determine if certain methods of coal mining can occur without having a significant long-term impact on wildlife, in general, and on threatened and endangered plant and animal species and their essential habitats. Such investigations, studies and evaluations may be conducted on an as-needed or case-by-case basis in reviewing individual coal leasing or development proposals (e.g., mine plans) or, if opportunities or needs arise, area-wide studies may be conducted. These studies would include keeping resource base data current (e.g., where existing raptor nests become abandoned or where new raptor nests become established), analysis of effects to wildlife and threatened and endangered species habitats and populations, and the cumulative effects of mining operations and other activities in the area. Consultation with other agencies (e.g., USFWS, WGFD, etc.), special interest groups, and with industry would occur as needed or required.

About 405 acres of the North Fork Vermillion Creek drainage would be closed to further consideration for Federal coal leasing and development. Coal leasing and development would conflict with the intended management of this area for possible reintroduction of candidate wildlife and plant species of high interest to the State of Wyoming.

Big game crucial winter ranges and birthing areas (about 276,200 acres) would be open to further consideration for coal leasing and development with a provision for maintaining a balance between coal leasing and development and adequate crucial winter range and birthing area habitats to prevent significant adverse impacts to important big game species. This would be accomplished through controlled timing and sequencing of Federal coal leasing and development in these areas. For example: Satisfactory abandonment and adequate reclamation of mined lands in big game crucial winter ranges and birthing areas would be required before additional Federal coal leasing and development would be initiated in the same crucial winter ranges and birthing areas.

The greater Cooper Ridge and Elk Butte areas (about 25,765 acres) would be open to further consideration for Federal coal leasing and development, pending further study. This study is for the purpose of defining the extent of any deer and antelope crucial winter range in the area, and for determining if certain methods of coal mining can occur in the area without having a significant long-term impact on the deer and antelope herds.

For the protection of important petroglyph sites, other important cultural resource values, and important geo-

logic and ecologic features, about 13,340 acres of Federal coal lands would be open to further consideration for leasing and development for subsurface mining methods only (refer to the Natural Corals, Cedar Canyon, Greater Sand Dunes, and Steamboat Mountain portions of the Special Management Area section for more details). Any Federal coal leasing and development on these lands would include a no surface occupancy requirement for any related ancillary facilities or surface disturbing activities. These same lands would be closed to surface mining methods and any related activities.

About 12,200 acres of Federal coal lands within the City of Rock Springs Expansion Area would be open to consideration for coal leasing and development with provision for any needed restrictions or requirements to assure that subsidence will be avoided or mitigated and that public health and safety will not be adversely affected. A leasing plan would be prepared prior to issuing any leases.

In general, cultural sites on Federal coal lands would be managed as avoidance areas for surface disturbing activities. As avoidance areas, cultural sites would be open to consideration for coal leasing and development. Surface disturbing activities associated with such actions as surface coal mining methods, exploration drilling, construction and location of ancillary facilities, roads and other types of rights-of-way, etc., would be avoided in these areas, if possible. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities (primarily excavation and other data recovery measures) would be emphasized. Except for those closed to leasing, or closed to surface mining methods, or identified as having no surface occupancy restrictions, this includes cultural sites that are either listed or that are eligible for listing on the NRHP. If necessary, appropriate buffer zones would be established to protect sites that are listed or eligible for listing on the NRHP. Data recovery measures would be implemented in the context of an NRHP district to maximize efficiency of data recovery efforts.

Grouse nesting areas (sage or sharptail grouse) would be open to consideration for Federal coal leasing and development with the following requirement:

If an occupied grouse nest that would be adversely affected by coal mining and related surface disturbing activities is identified, surface uses and activities would be delayed in the area of influence for the nest until nesting is completed.

Active grouse leks (sage and sharptail grouse) and the area within a ¼ mile radius of active leks would be

## ALTERNATIVES

managed as avoidance areas for surface disturbing activities and would be open to consideration for Federal coal leasing and development with the following requirements:

Surface disturbing activities associated with such actions as surface coal mining methods, exploration drilling, construction of roads and other types of rights-of-way, etc., would be avoided in these areas, if possible. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities would be emphasized.

Permanent and high profile structures, such as buildings, overhead powerlines, other types of ancillary facilities, etc., would be prohibited in these areas.

During the grouse mating season, surface uses and activities would be prohibited between the hours of midnight and 9:00 AM, within a ½ mile radius of active leks (i.e., those leks occupied by mating birds).

Wetland and riparian areas on Federal coal lands (about 2,000 acres) would be managed as avoidance areas for surface disturbing activities and would be open to consideration for coal leasing and development with the following requirements:

Surface disturbing activities associated with such actions as surface coal mining methods, exploration drilling, construction of ancillary facilities, roads and other types of rights-of-way, etc., would be avoided in these areas, if possible. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities would be emphasized.

### **Areas of BLM-Administered Public Land Surface Overlying State-Owned Coal**

About 29,000 acres of BLM-administered public land surface overlying state-owned coal would be open to further consideration for coal development with appropriate and necessary conditions and requirements for protection of the public land surface and surface resource values and uses. About 1,000 acres would be unsuitable for further leasing consideration.

About 25,000 acres would be subject to continued field investigations, studies and evaluations to determine if certain methods of coal mining can occur without having a significant long-term impact on wildlife, in general, and on threatened and endangered plant and animal species and their essential habitats. Such investigations, studies and evaluations may be conducted on an as-needed or case-by-case basis in reviewing indi-

vidual coal leasing and development proposals by the state or, if opportunities or needs arise, area-wide studies may be conducted. These studies would include keeping resource base data current (e.g., where existing raptor nests become abandoned or where new raptor nests become established), analysis of effects to wildlife and threatened and endangered species habitats and populations, and the cumulative effects of mining operations and other activities in the area. Consultation with other agencies (e.g., USFWS, WGFD, etc.), special interest groups, and with industry would occur as needed or required.

About 3,000 acres would be closed for surface mining activities to protect cultural and geologic values. These would be no surface occupancy and very limited surface occupancy areas.

### **Preference Right (Coal) Lease Applications (PRLAs)**

Processing of the Beans Spring coal PRLAs (the one coal PRLA project proposal in the planning area) would be completed. In the preparation of the EIS for this PRLA project, special attention will be given to those sensitive value areas identified through the unsuitability review and multiple use conflict evaluation. The EIS will result in development of needed stipulations for the protection of sensitive values. These protective stipulations will be carried through the final processing and leasing decisions for the PRLA project, which will result in determining if the preference right applicant is successful in meeting the final showing requirements and is entitled to a preference right (non-competitive) Federal coal lease for the Beans Spring coal project area (Appendix 3-2).

### **Solid Leasables (Sodium/Trona)**

**MANAGEMENT OBJECTIVES:** The objectives for management of the federal sodium (trona) resource would be to provide for both short- and long-range development of federal sodium (trona) in an orderly and timely manner.

**MANAGEMENT ACTIONS:** The known sodium leasing area (Map 18) would remain open to exploration and consideration for leasing and development, but would be closed to prospecting permits. The remainder of the planning area would be open to sodium prospecting except for areas closed to mineral leasing, surface mining, or mechanical prospecting type activities (areas closed to drilling, vehicle use, and explosive charges) (Table 2-11). Leasing would be considered on a case-by-case basis and management direction applied in this plan would be considered.



## ALTERNATIVES

Incorporated cities and towns would be closed to leasing in accordance with 43 CFR 3500. This is a non-discretionary closure.

### Other Leasables

**MANAGEMENT OBJECTIVE:** The objective for management of other leasables is to provide for easing, exploration, and development.

**MANAGEMENT ACTIONS:** Leasing would be considered on a case-by-case basis.

### Mineral Materials

**MANAGEMENT OBJECTIVES:** The objectives for management of salable minerals would be to provide mineral materials in convenient locations for users while protecting surface resources.

**MANAGEMENT ACTIONS:** Sale areas and community pits would be established in conformance with other resource objectives. Adequate mine and reclamation plans for both new and existing use areas would be developed. Requests from users for mineral material disposals would be evaluated.

Sales and free use of mineral materials from established sites would be allowed. Proposed sales from new use areas would be evaluated on a case-by-case basis.

Moss rock and sand would be provided for in localized common use areas. No topsoil sale areas would be established.

Table 2-13 shows the areas that would be closed to mineral material sales.

**TABLE 2-13**

### AREAS CLOSED TO MINERAL MATERIAL SALES (acres)

Area	Preferred Alternative	Alternative A	Alternative B	Alternative C
Aboriginal Quarry Site	160	160	160	160
Candidate Plant Species Sites	3,110	3,110	3,110	3,110
Candidate Plant Species Potential Habitat	0	0	0	35,540
Cedar Canyon ACEC	500	20	20	2,550
Currant Creek Drainage	23,740	0	0	23,740
Dry Sandy Swales	20	20	0	20
Dug Springs Stage Station	10	10	10	10
LaClede Stage Station	10	10	10	10
Native American Burial Sites	2	2	2	2
Natural Corrals ACEC	1,115	1,115	640	1,115
Oregon Buttes ACEC	3,450	3,450	3,450	3,450
Parting-of-the-Ways	40	0	0	0

## ALTERNATIVES

**TABLE 2-13 (Continued)**

### AREAS CLOSED TO MINERAL MATERIAL SALES (acres)

Area	Preferred Alternative	Alternative A	Alternative B	Alternative C
Pine Springs ACEC & Expansion Area	6,030	90	90	6,030
Red Creek ACEC	50,120	0	0	55,880
Rock Art Sites	2,500	100	100	11,000
Sand Dunes ACEC	41,640	41,640	25,250	41,640
South Pass Area	5,260	0	0	5,260
Steamboat Mountain Area	43,010	0	0	43,010
<b>Total Acres</b>	<b>180,717</b>	<b>49,727</b>	<b>32,842</b>	<b>232,527</b>

### Locatable Minerals

**MANAGEMENT OBJECTIVE:** The objective for management of locatable minerals would be to provide opportunities to explore, locate, and develop mining claims while protecting other resource values.

**MANAGEMENT ACTIONS:** With the exception of lands withdrawn from locatable minerals, the planning area would be open to mineral exploration, location, and development. The existing mineral classification withdrawals (phosphate, coal, oil shale) would be revoked (Table 2-7). Table 2-6 lists proposed withdrawals.

Surface-disturbing activities on mining claims require a notice submitted to BLM for a cumulative surface disturbance of 5 acres or less and a plan of operations for disturbances of more than 5 acres. In designated ACECs, WSAs, potential additions to the Wild and Scenic River System, and areas closed to ORVs, a plan of operations would be required for any surface disturbance activities, regardless of acreage involved.

### Geophysical

**MANAGEMENT OBJECTIVES:** The objective for management of geophysical activity would be to provide opportunity for exploration of mineral resources or scientific uses, while protecting other resource values.

**MANAGEMENT ACTIONS:** Most of the planning area would be available for consideration of geophysical activities. Table 2-14 shows areas that would be closed to the use of geophysical vehicles and explosive charges to protect sensitive resources.

ORV management prescriptions would apply to the use of vehicles for geophysical operations (see Off-Road Vehicle Management). Geophysical vehicle use would conform to these ORV management prescriptions: use of vehicles in areas, except for areas proposed to be designated as closed, could be considered under the guidelines of necessary tasks (see glossary) provided that a site specific analysis determines resource objectives could be met.

Geophysical activities would be limited within ¼ mile or visual horizon of historic trails (whichever is closer) to protect trail integrity.

Geophysical travel through developed and semi-developed recreation sites would be restricted to existing roads and trails.

Geophysical exploration on the potential wild sections of the Sweetwater and Big Sandy rivers under Wild and Scenic River consideration would be limited to foot access and placement of surface cables. No vehicles would be allowed. Surface charges may be allowed if a site specific analysis determines no adverse impacts would occur to river values.

## ALTERNATIVES

**TABLE 2-14**

### AREAS PROPOSED FOR CLOSURE TO GEOPHYSICAL VEHICLES & EXPLOSIVE CHARGES (Acres)

Area	Preferred Alternative	Alternative A	Alternative B	Alternative C
14-Mile Recreation Area	20	0	0	20
Aboriginal Quarry Site	160	160	160	160
Boar's Tusk	500	0	0	500
Candidate Plant Species Locations	3,110	3,110	3,110	3,110
Cedar Canyon Petroglyphs	515	20	20	515
Crookston Ranch	40	0	0	40
Dry Sandy Swales (1 mile)	20	20	20	20
Dug Springs Stage Station	10	0	0	10
LaBarge Bluffs Petroglyphs	20	0	0	20
LaCiede Stage Station	10	0	0	10
Native American Burial Sites	2	2	2	2
Natural Corrals	20	20	20	20
Oregon Trail/Parting of the Ways	40	0	0	40
Pine Springs ACEC	90	90	90	90
Sugarloaf Petroglyphs	20	0	0	20
Tolar Petroglyphs	20	0	0	20
White Mountain Petroglyphs	20	0	0	20
Wilderness Study Areas (minus Adobe Town)	172,000	172,000	172,000	172,000
<b>Total</b>	<b>176,617</b>	<b>175,422</b>	<b>175,422</b>	<b>176,617</b>

Geophysical notices of intent would be evaluated on a case-by-case basis through environmental analysis and subject to appropriate limitations (e.g., vehicle use restriction), including those areas subject to seasonal limitations (Table 2-10). In addition, the use of explosive charges may not be allowed in any area if analysis determines that unacceptable adverse impacts would occur. Generally, all authorizations would be issued with appropriate application of surface disturbance mitigation requirements.

See other resource management prescriptions in this document for other restrictions that may apply to mineral management activities.

### Off-Road Vehicle Management

**MANAGEMENT OBJECTIVE:** The objectives for off-road vehicle (ORV) management would be to provide

opportunities for off-road vehicle use in conformance with other resource objectives.

Some types of motor vehicle travel would be allowed under the "necessary tasks" work exemption provided resource damage did not occur. Examples of necessary tasks include picking up big game kills, repairing range improvements, managing livestock, and geophysical activities associated with oil and gas exploration.

**MANAGEMENT ACTIONS:** Off-road vehicle use would be managed according to the ORV designations (Table 2-15 and Map 19). Areas for ORV rallies, cross-country races, and outings would be provided on a permit basis. Approximately 172,000 acres would remain closed to off-road vehicle use to protect naturalness, solitude, and opportunities for unconfined recreation.

# ALTERNATIVES

TABLE 2-15

## ORV DESIGNATIONS (Preferred Alternative)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
Aboriginal Quarry Site Closed	160	Area closed to protect cultural values.
Big Game Winter Ranges Limited through seasonal closures (11/15 - 4/30 as needed)	1,500,000	To reduce stress to wintering animals. Closure to over- the-snow vehicles would be evaluated on a case by case basis in conjunction with Wyoming Game & Fish.
Candidate Plant Species Closed	3,110	Closed yearlong to protect plant populations. (Does not apply to over-the-snow vehicles.)
Cedar Canyon ACEC Closed	515	Area closed within 1/2 mile of petroglyphs to protect wildlife and cultural values.
Limited to designated roads and trails	2,035	Limited to protect wildlife and cultural values.
Crookston Ranch Closed	40	Crookston Ranch closed to protect historic site.
Current Creek/Sage Creek Limited to designated roads and trails	75,900	Transportation planning would be done to protect resource values.
Deer Parturition Areas Limited through seasonal closures (May 1 to June 30 as needed)	140,880	To reduce stress to deer.
Dry Sandy Swales Closed	20	Area closed to protect integrity of setting and soils.
Dug Springs Station Limited to designated roads and trails	10	Limited to protect historic values.
Elk Calving Areas Limited through seasonal closures (to be decided by biologist - May 1 to June 30 as needed)	85,830	To reduce stress to elk.
General GRRRA Limited to existing roads and trails	3,081,135	Limited to reduce resource damage and limit new overnight roads.

## ALTERNATIVES

### TABLE 2-15 (Continued)

#### ORV DESIGNATIONS (Preferred Alternative)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>Greater Sand Dunes ACEC</b>		
Open	10,500	Area designated open on active sand dunes to allow the recreating public a place to play in the sand dunes.
Limited to existing roads and trails	5,810	Limited to protect resource values.
Closed	90	Closed around Boar's Tusk to protect geologic values.
<b>Green River City Limits</b>		
Limited to designated roads and trails within a 2-mile radius around the city limits	4,500	To reduce impacts from ORV freerplay.
<b>LaBarge Bluffs Petroglyphs</b>		
Closed	20	Area closed to protect cultural values.
Limited to designated roads and trailsvalues.	500	Limited to protect cultural
<b>LaCiede Stage Station</b>		
Limited to designated roads and trailsvalues.	10	Limited to protect historic
<b>Monument Valley</b>		
Limited to designated roads and trails. A transportation road plan would be prepared.	64,300	To protect paleontological and watershed values.
<b>Moose Calving Areas</b>		
Limited through seasonal closures (to be decided by biologist - May 1 to June 30 as needed)	410	To reduce stress to moose.
<b>Natural Corrals ACEC</b>		
Closed	20	NRHP site and the trail ½ mile to the spring are closed to protect wildlife and cultural values.
Limited to designated road and trails	1,300	Limited to protect resource values.
<b>North &amp; South Table Mountains</b>		
Limited to designated roads and trails	1,280	Limited to protect cultural and wildlife values.

# ALTERNATIVES

TABLE 2-15 (Continued)

## ORV DESIGNATIONS (Preferred Alternative)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>Oregon Buttes ACEC</b> Closed	3,450	All of the ACEC is closed to vehicle traffic to protect adjacent WSA values.
<b>Parting of the Ways</b> Limited to designated roads and trails/values.	40	Limited to protect historical
<b>Pine Springs ACEC</b> Closed	90	Closed yearlong within fences including over-the-snow vehicles to protect cultural values.
Limited to existing roads and trails	90	Vehicle traffic limited to access road.
<b>Pine Springs Expansion Area</b> Closed	5,300	Closed yearlong - including over-the-snow vehicles to protect cultural and prehistoric values.
Limited to existing roads and trails	730	Limited to protect resource values.
<b>Raptor Nesting Areas</b> Limited through seasonal closures (2/1 through 7/31)	890	To protect nesting raptors.
<b>Riparian Areas</b> Limited to existing roads and trails	8,730	To protect riparian and watershed values. During muddy conditions vehicle travel will be limited to existing roads and trails to protect soil and watershed values.
<b>Sage Creek Mountain</b> Limited to existing roads and trails	1,300	Limited to protect cultural values and T&E plants.
<b>South Pass</b> Limited to designated roads and trails	33,000	Limited to protect cultural resource values.
<b>Steamboat Mountain</b> Limited to designated roads and trails. Seasonal closures to be determined.	43,010	To protect wildlife values.
<b>Steep Slopes of White Mountain</b> Limited to designated roads and trails/visual values.	68,640	To protect watershed and

## ALTERNATIVES

**TABLE 2-15 (Continued)**

**ORV DESIGNATIONS  
(Preferred Alternative)**

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>Sugarloaf Petroglyphs</b> Closed	20	Area closed to protect cultural values.
Limited to designated roads and trails	500	Limited to protect cultural values.
<b>Tolar Petroglyphs</b> Closed	20	Area closed to protect cultural values.
Limited to designated roads and trails	500	Limited within 1/2 mile radius to protect cultural values.
<b>Tri-State Monument</b> Closed	8,020	Area closed to protect watershed values.
Limited to designated roads and trails	47,280	Limited to protect watershed values.
<b>White Mountain Petroglyphs ACEC</b> Closed	20	Closed to maintain integrity of setting and protect cultural values. Vehicle travel limited to parking area. All other acreage is closed to vehicle travel.
Limited to designated roads and trails	500	Limited within 1/2 mile radius.

Travel in wildlife crucial habitats (strutting grounds, spawning beds, big game ranges, calving/fawning periods, etc.) (Table 2-15) would be seasonally restricted (about 128,000 acres).

Travel would be restricted to certain designated roads in sensitive watersheds and on cultural sites.

Generally, over-the-snow vehicle use would be subject to the prescriptions described in Table 2-15 unless a site specific analysis determines otherwise.

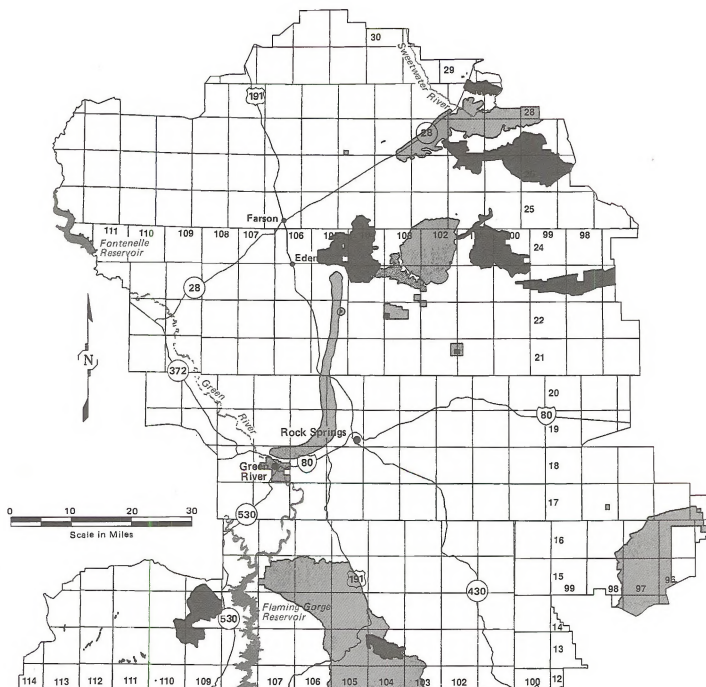
An ORV implementation plan would be prepared to replace the two existing ORV plans. This ORV plan would reflect the ORV designations made in this plan.

Off-road vehicles refers to mechanical and mechanized vehicles such as mountain bikes and big game carriers. The implementation plan would consider mountain bike and other mechanized vehicles needs. Except for areas that would be closed to off-road vehicle travel,

some types of motor vehicle use would be allowed under the "necessary tasks" work exemption provided resource damage did not occur. Examples of necessary tasks include picking up big game kills, repairing range improvements, and managing livestock. Approximately 137,672 acres would remain closed to off-road vehicle use to protect naturalness, solitude, and opportunities for unconfined recreation.

Geophysical vehicle use would conform to these ORV management prescriptions: use of vehicles in areas, except for areas proposed to be designated as closed, could be considered under the guidelines of necessary tasks (see glossary) provided that a site specific analysis determines resource objectives could be met.

See other resource management prescriptions in this document for other restrictions that may apply to off-road vehicle management activities.



- Closed
- Designated Roads and Trails
- Limited to Existing Roads and Trails
- Open

**Map 19**  
**Preferred Alternative**  
**Off Road Vehicle Designations**  
**Green River Planning Area**



## ALTERNATIVES

### Recreation Resource Management

**MANAGEMENT OBJECTIVES:** The objectives for recreation management would be to ensure the continued availability of outdoor recreational opportunities sought by the public while protecting other resources. Other objectives would be to meet legal requirements for the health and safety of visitors and to mitigate conflicts between recreation uses and from different types of resource users.

**MANAGEMENT ACTIONS:** Most public lands in the planning area would be open and available for consideration to all individual, commercial, and competitive outdoor recreation uses. Existing developed sites would be managed for public health and safety. Undeveloped areas would be managed to give first consideration to air quality, cultural resources, watershed, and wildlife values.

A 14-day camping limit on all public lands would be maintained. Camping would be limited to 14 days within a 28-day consecutive period. After the 14th day of occupation, campers must move outside a 5-mile radius of the previous location. Camping would not be allowed on posted waters or within 200 feet of springs, seeps, and ponds to protect water quality and wildlife and livestock watering areas. Dispersed camping in riparian areas would be allowed, within 200 feet from water. Areas would be closed if resource damage occurs.

Special recreation permits would be considered on a case-by-case basis. Necessary mitigation would be required for special recreation permits, commercial recreation uses, and major competitive recreation events to provide resource protection and public safety.

Suitable wild horse herd viewing area(s) would be developed to enhance public viewing of horses. Short-term intrusions (within ½ mile) and actions that would blend with the landscape or would benefit the intent of the wild horse herd viewing area would be considered in these areas. The viewing area and ½ mile surrounding area would be closed to intrusions and surface disturbing activities (e.g. structures, mineral activities, powerlines, roads, etc.) that could interfere with opportunities to view horses.

Oregon Buttes, Honeycomb Buttes, Steamboat Mountain, Leucite Hills, Red Creek, Pine Mountain, Little Mountain, and Cedar Canyon areas would be managed to assure their continuing value for recreational opportunities (Map 20). Recreation area management plans would be prepared for these areas if necessary.

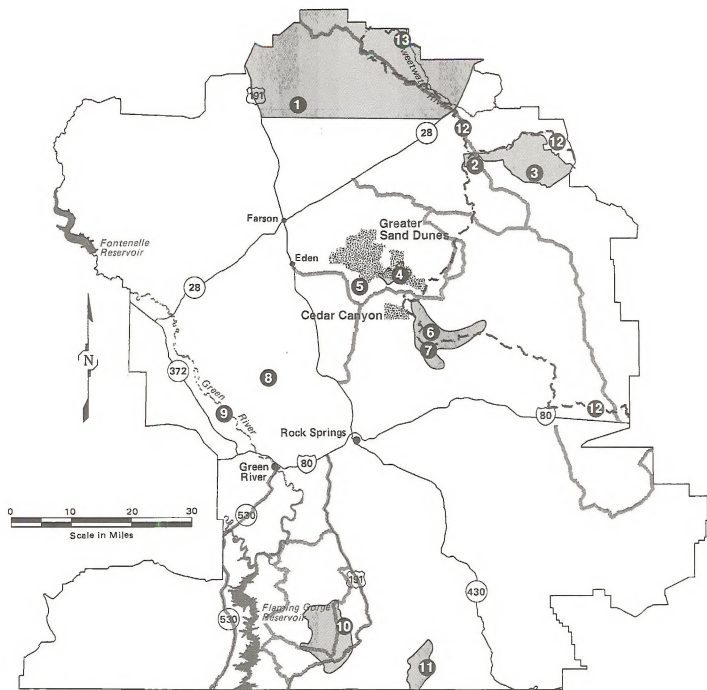
The Continental Divide National Scenic Trail, Continental Divide Snowmobile Trail, the Green River, and Wind River Front (about 265,188 acres and 24 miles of trails) would be managed as special recreation management areas to focus management on areas with high recreation values or areas where there are conflicts between recreation and other uses. The existing special recreation management areas (Killpecker Sand Dunes and Oregon and Mormon Pioneer National Historic Trails) would be retained. The remainder of the planning area would be managed as an extensive recreation management area. The existing management plan for the Oregon and Mormon Pioneer Trails would be implemented. Management plans for the Green River, Wind River Front, the Sand Dunes, and the Continental Divide National Scenic Trail and Snowmobile Trail would be developed.

Recreation project plans and an interpretive prospectus would be developed for the 14-Mile recreation site, Sweetwater Campground, Boar's Tusk, Leucite Hills, the Continental Divide Snowmobile Trail, and the Farson fossil fish beds. No development activities, such as those associated with mineral development, pipelines, powerlines, or well pads, would be allowed on the 14-Mile recreation area. The public water reserve and the recreational withdrawal which closes the area to mineral location and disposal would be retained unless activities were designed to enhance the recreation site. The 14-Mile recreation site would be open to activities such as recreation site facilities.

The integrity of the Continental Divide Snowmobile Trail would be maintained by limiting surface-disturbing activities or facilities on or within ¼ mile of the trail (2,330 acres). The existing trail system would be expanded by adding loop trails.

Mountain bike trail opportunities would be explored. Partnerships with local citizens and Chambers of Commerce, Forest Service, and the State of Wyoming would be pursued. Specific areas would include the Little Mountain-Firehole Canyon-Flaming Gorge area and the Wyoming Continental Divide Snowmobile Trail. Trails would be signed, and brochures would be developed. Other trails would be developed on a case-by-case basis.

The Green River, Sweetwater River, Big Sandy River, and Bitter Creek between the towns of Rock Springs and Green River would be managed for recreation values, and recreation area management plans would be developed, where necessary. The establishment of a "greenbelt" along the Green River from Fontenelle Dam to Flaming Gorge Reservoir (approximately 3,200 acres) would be supported.



**Map 20**  
**Recreational Use Areas**  
**Green River Planning Area**

## ALTERNATIVES

Travel routes that meet the criteria for backcountry byways would be designated. Four backcountry byways and one scenic loop for the Tri-Territory Loop, the Lander Road, Fort LaCiede Loop, the Firehole-Little Mountain Loop, and the Flaming Gorge Scenic Loop (Map 20) have been identified and would include consideration for mountain bike use. Brochures and interpretive signs would be prepared to inform users. Additional backcountry byways would be considered on a case-by-case basis.

Areas would be designated for gathering campground firewood.

Recreation site development projects and access would be managed to maintain or improve wetland habitat conditions along intensively used streams and reservoirs.

Consideration for permanent recreation site facilities in existing use areas would be made provided proper mitigation and exceptions to Executive Order 11988 apply. The area within 500 feet of riparian areas and floodplains would be avoidance areas for new recreation site facilities. Exceptions may be considered following a site specific analysis. Impacts to riparian areas and water quality would not occur. Stream water at undeveloped recreation sites would be monitored. If the water is not potable, signs would be posted.

The natural values of Boar's Tusk, Pilot Butte, and Emmons Cone (270 acres) would be protected from surface disturbance and the integrity of the geologic features would be maintained. No surface occupancy would be allowed on Boar's Tusk, Pilot Butte, and Emmons Cone, unless activity would enhance management of these features (Table 2-9 and Table 2-4). Interpretive facilities would be allowed.

Surface disturbing activities, such as those associated with mineral development, roads, pipelines, powerlines, etc., on recreation sites (2 developed, 5 semi-developed, 13 underdeveloped) would not be allowed within 1/4 mile of sites unless activities were determined to be compatible with recreation objectives for the area. Generally such activities would be designed to avoid these areas. An approved plan would be required prior to the site disturbance (Map 21).

Posting information and directional signs would be necessary in some areas. This alternative establishes various types of resource designations, and sign posting would be provided to promote visitor use of the various areas consistent with management objectives.

See other resource management prescriptions in this document for other restrictions that may apply to recreation resource management activities.

## Vegetation Management

**MANAGEMENT OBJECTIVES:** The objectives for management of vegetation would be to remove or alter stands of brush with vegetation treatments (mechanical, biological, chemical, and prescribed fire) in order to meet watershed, wild horse, and wildlife resource management objectives and provide for plant diversity (desired plant communities) to meet livestock management, watershed, wild horse, and wildlife objectives.

**MANAGEMENT ACTIONS:** Approximately 67,700 acres have been identified for vegetation manipulation to increase forage availability and enhance habitat.

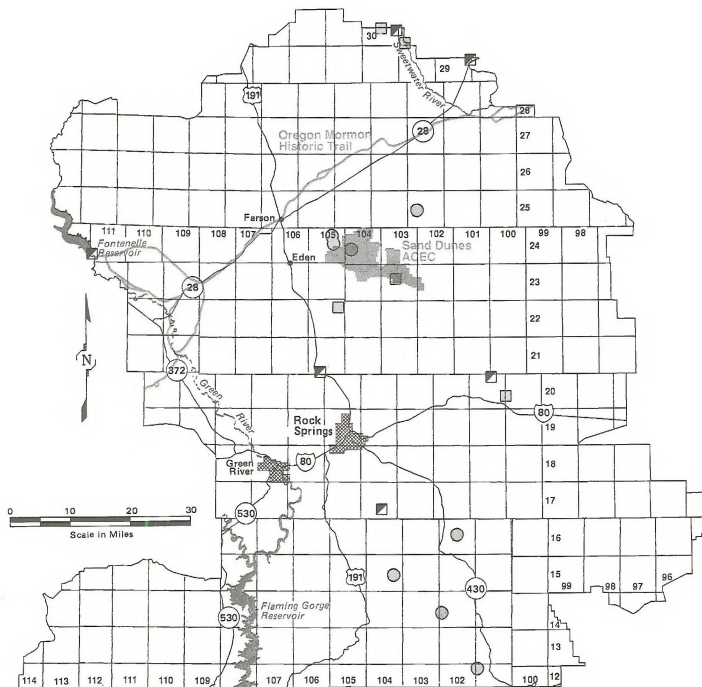
Desired plant community objectives would be established for the planning area if possible when ecological site inventory data becomes available. All activity plans would incorporate desired plant community objectives.

Prescribed fire would generally be the preferred method of vegetation manipulation to convert stands of brush to grasslands and to promote regeneration of aspen stands and/or shrub species. Low intensity burns during periods of high soil moisture would be the preferred methods/times in mountain shrub communities (Appendix 9-5).

Prescribed burns generally would be conducted in areas having greater than 35 percent sagebrush composition, 20 percent desirable grass composition, and greater than 10 inches of precipitation. Other vegetation manipulation methods would be considered on a case-by-case basis depending on objectives and cost benefits. All treated areas would be rested for 2 growing seasons from livestock grazing. Burn areas would be fenced from livestock if necessary. Prescribed burns would not be conducted in areas with surface coal.

Prescribed burns may be conducted in crucial big game winter ranges if habitat values would improve for these species.

All brush control projects would involve site specific environmental analysis; coordination with affected livestock operators and the WGFD; and would include multiple use objectives for other resource uses including livestock, wildlife, and watershed.



- Developed Sites
- ▨ Semi-Developed Sites
- Undeveloped Sites
- Special Recreation Management Area

**Map 21**  
**Recreation Sites**  
 Green River Planning Area

## ALTERNATIVES

All vegetation treatments would be designed on a case-by-case basis and would be irregular in shape for edge effect, cover, and visual esthetics. No more than 10 percent of sagebrush within antelope and mule deer winter ranges would be treated in a 10-year period (9,700 acres). This would apply to federally administered winter range only. No more than 20 percent of sagebrush within 2 miles of sage grouse leks would be treated within a 10-year period.

Treatment units within VRM Class II areas would not exceed 40 acres in size unless site specific analysis determines that VRM Class II objectives would be met. Generally no more than 10 percent of the area would be treated within a 10-year period (5,650 acres).

To protect water quality and dissipate erosion, riparian areas and adjacent upland areas would not be burned simultaneously. Vegetation buffer strips of 100 feet would be left intact adjacent to perennial streams.

The inner gorge of intermittent and ephemeral drainages would be treated in such a manner as to leave mosaic patterns or untreated areas of vegetation. No more than 50 percent of the cover in the inner gorge area may be treated.

Herbicide loading sites would be located at least 500 feet from live water, floodplains, or riparian areas and would be utilized in accordance with the guidelines in Appendix 9-5. Treatments would adhere to all label directions.

See other resource management prescriptions in this document for other restrictions that may apply to vegetation management activities.

## Visual Resource Management

**MANAGEMENT OBJECTIVE:** The objective for management of visual resources management would be to maintain or improve scenic values, visual quality, and establish priorities for managing the visual resources in conjunction with other resource values.

**MANAGEMENT ACTIONS:** Visual resource classes would be retained or modified to enhance other resource objectives such as cultural, recreation, and special management areas. The VRM classifications would become as shown on Table 2-16 and Map 22.

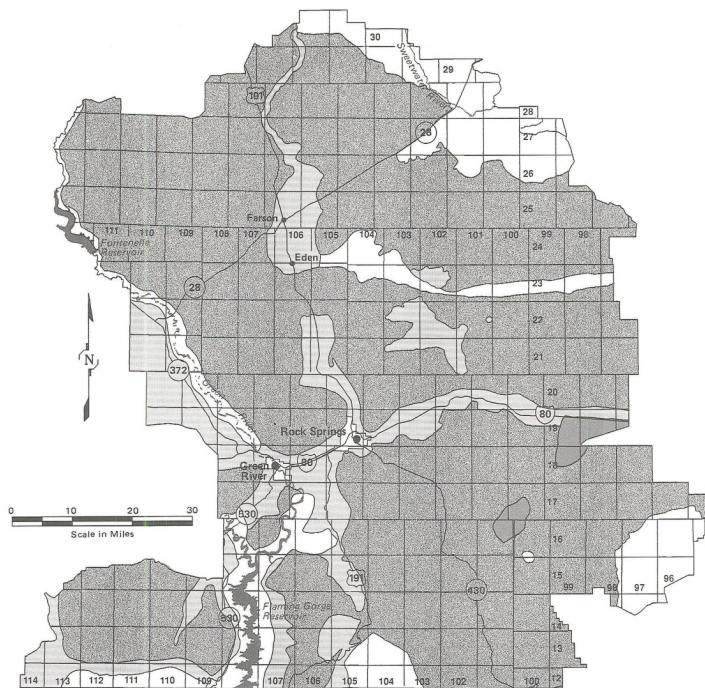
TABLE 2-16  
PROPOSED VRM CLASSES BY ALTERNATIVE  
(approximate acres<sup>1</sup>)

VRM Class	Preferred Alternative	Alternative A	Alternative B	Alternative C
Class I	0	0	0	0
Class II	498,000	423,000	390,000	500,000
Class III	330,000	330,000	215,000	328,000
Class IV	2,783,000	2,858,000	3,006,000	2,783,000
Rehabilitation Areas <sup>2</sup>	24,000	24,000	24,000	24,000

<sup>1</sup> BLM-administered acres

<sup>2</sup> By definition, rehabilitation is necessary to bring these areas up to one of the four other classes.





- Class II
- Class III
- Class IV
- Rehabilitation Area

**Map 22**  
**Preferred Alternative**  
**Visual Resource**  
**Management**  
**Green River Planning Area**

## ALTERNATIVES

Projects would be designed to meet the objectives of the established visual classifications and appropriate mitigation applied. Facilities including existing or new wells and facilities, linear rights-of-way, etc., would be screened, painted, or designed to blend with the surrounding landscape.

Management actions on the lands classified as VRM Class II lands would be designed to blend into the natural landscape and retain the existing character of the landscape (Appendix 9-5).

Management actions on the lands classified as VRM Class III lands would be designed to partially retain the existing character of the landscape.

Management actions on the lands classified as VRM Class IV lands could result in a major modification.

Management actions in rehabilitation areas would be designed to reclaim and improve visual resource values to achieve a higher classification (Classes III and IV) (see Map 22 and Table 2-16).

The scenic values along Highway 28 within Fremont County (12.5 miles) would be protected. All proposed lands actions and other activities within view of the highway would be evaluated for impacts and mitigated to protect the scenic value of this historical area, and Class II visual values, where designated, would be retained.

Major highways would be managed under their current visual classifications except for the area along Interstate 80 between Green River and Rock Springs which would be managed for Class II visual values (Map 22, Table 2-16).

Suitable wild horse herd viewing area(s) would be developed to enhance public viewing of horses. Short-term intrusions and actions that would blend with the landscape or would benefit the intent of the wild horse viewing area would be considered. The viewing area would be closed to surface disturbing activities such as those associated with mineral development, roads, pipelines, powerlines, structures, etc., on or within a 1/2 mile radius of any wild horse viewing area (500 acres) (Table 2-9 and Table 2-4).

All activities that could be viewed from the Fontenelle Reservoir would be designed to be subordinate to the landscape.

See other resource management prescriptions in this document for other restrictions that may apply to visual resource management activities.

## Watershed/Soils Management

**MANAGEMENT OBJECTIVES:** The objectives for watershed/soils management would be to stabilize and conserve soils, to increase vegetative production, to maintain or improve surface and groundwater quality, and to protect, maintain, or improve wetlands, floodplains, and riparian areas.

**MANAGEMENT ACTIONS:** Channel erosion, specifically bank erosion, would be reduced where it has resulted in severe losses of riparian habitat, and accelerated surface erosion would be reduced in areas having severe erosion susceptibility (Map 23).

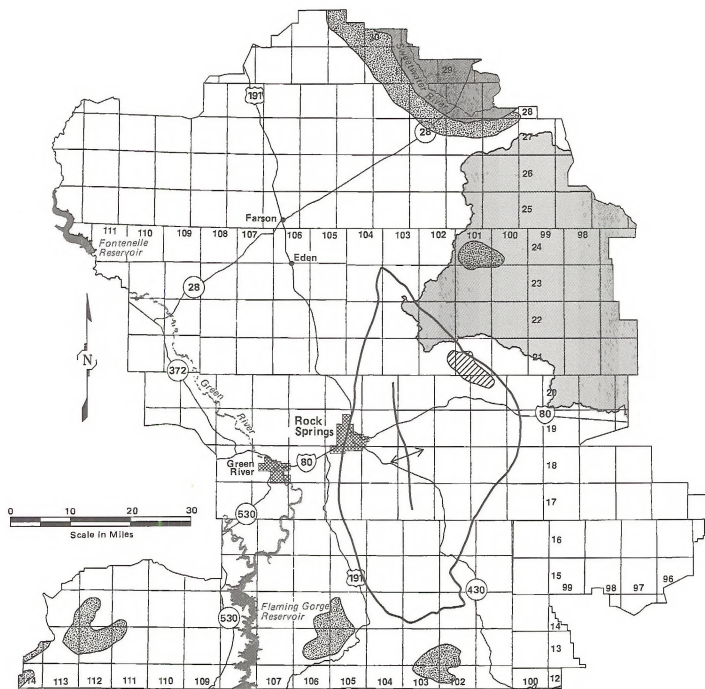
Sediment, phosphate, and salinity load would be reduced in the planning area, where possible. Measures listed in Appendix 5-1 would be applied. Guidelines described in the Wyoming Water Quality Rules and Regulations would be applied (Wyoming 1989).

Channel stability would be improved and maintained, and damaged wetland areas would be restored (e.g., fencing short stream reaches). Enclosures would be designed to allow ample water for livestock and allow minimum impediments to big game migration.

Wetlands and floodplains (95,550 acres) within the planning area would be managed in accordance with Executive Orders 11988 and 11990.

Those areas where the soils are highly erodible or difficult to reclaim would receive increased attention and, where necessary, surface disturbing activities on these areas could be limited. These areas would be avoided where possible. Activities could be allowed if a site specific analysis determines that no adverse impacts would occur to water quality, and soil degradation would not occur. An erosion control plan (such as an ERRP, Appendix 5-3) would be prepared (Map D).

BLM would participate with federal and local government agencies in the development and implementation of plans to reduce salinity in the Jack Morrow and Eighteenmile Canyon watersheds and the Big Sandy Seeps and in the development and implementation of plans to reduce phosphates delivered to the Fontenelle and Flaming Gorge Reservoirs. Salinity control plans and plugging of flowing wells would be implemented.



- Green River Watershed
- Sweetwater River Watershed
- Great Divide Basin Watershed
- Superior Recharge Area
- Other Recharge Areas
- Rock Springs Uplift

**Map 23**  
**Areas of**  
**Hydrological Concern**  
**Green River Planning Area**



## ALTERNATIVES

Roads and trails, seismic lines, rights-of-way, and oil and gas sites would be identified to determine those causing erosion and water quality problems, and rehabilitation plans would be developed and implemented. Areas that have been identified for inventory include Cedar Canyon, Little Colorado Desert, Red Creek ACEC, and Sage Creek/Currant Creek.

Watershed management plans would be directed at reducing erosion and sediment yield, promoting ground cover, and enhancing water quality. Plans would be prepared for Cedar Mountain and Sage Creek/Currant Creek. The Red Creek Management Plan would be updated. The habitat management plan on Sage and Currant Creek would be updated to include watershed management directives.

Sediment reduction and water quality improvement objectives would be incorporated in activity plans and especially in AMPs that would be developed for the Upper Bitter Creek, Four J Basin, Vermillion Creek, and Upper Salt Wells Creek watersheds.

Surface disturbing activities (e.g., mineral activities, pipelines, powerlines, roads, recreation sites, etc.) that could adversely affect water quality, wetland and riparian habitat, would avoid the area within 500 feet of or on 100-year floodplains, wetlands, or perennial streams and within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages. Activities could be allowed if a site specific analysis determines that no adverse impacts would occur to floodplains, wetlands, perennial streams, or water quality and a plan to mitigate impacts to water quality was approved. Linear crossings would be considered on a case-by-case basis (Map 24 and Table 2-9).

The 100-year floodplains, wetlands, and riparian areas would be closed to any new permanent facilities (e.g., storage tanks, structure pits, etc.) but linear crossings would be considered (Table 2-9). Consideration for permanent recreation site facilities in existing use areas would be made with proper mitigation and conformance with Executive Order 11988.

Where groundwater was less than 100 feet in depth from the surface and with a permeability of no more than 0.1 foot/day, plants, mills, or associated tailing ponds and sewage lagoon would not be allowed.

Surface disturbance activities would be designed to avoid slopes greater than 25 percent (198,720 acres) or activity during wet and muddy periods, and would be allowed only following site-specific analysis with an approved plan and acceptable mitigation. Large or heavy truck traffic would not be allowed during wet

periods unless the roads are graveled for all-season use.

Roads would be constructed as described in BLM Manual 9113. New main artery roads would be designed to reduce sediment, salt, and phosphate loading to the Green River. Running surfaces of these roads would be graveled provided that the base does not already contain sufficient aggregate. Upgrading and graveling of existing main artery roads would be instituted as soon as possible.

Crossings of ephemeral, intermittent, and perennial streams associated with road and utility line construction would generally be restricted until after spring runoff and normal flows are established.

Dumping of produced water on roads would not be allowed unless TDS is less than 400 mg/l (state standard for the Colorado River drainage) and the water does not contain hazardous material. No produced water would be allowed on roads in Sublette County.

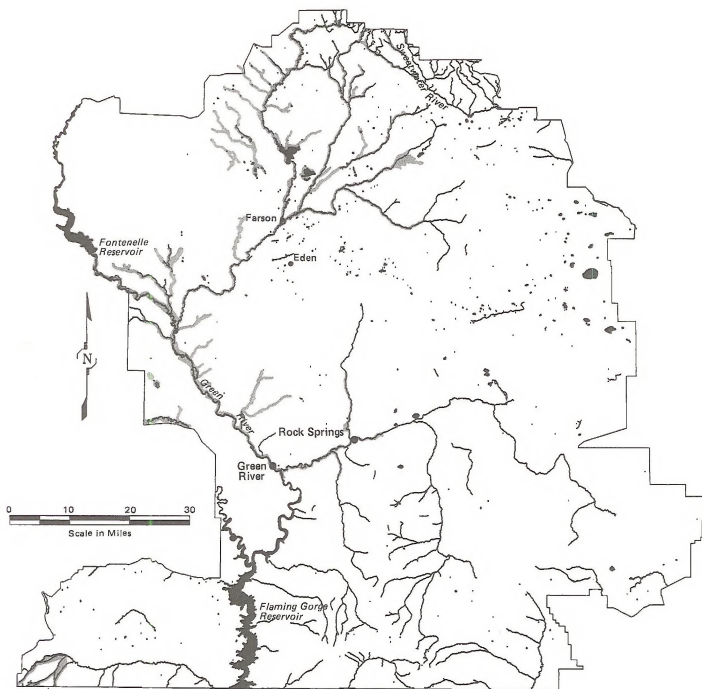
If soil permeability, water quality, and volume of produced water exceed acceptable standards outlined in NTL-2B and Onshore Order #7, reserve and disposal pits would be lined. Generally, pits in areas with a soil permeability of greater than 0.06 inch per hour would be lined (Appendix 5-1).


Recharge areas would be managed to protect groundwater quality. Protection would be provided by limiting road density and surface occupancy to maintain a healthy recharge area. Vegetative cover and geologic soil condition that are conducive to groundwater recharge would be maintained. Self-contained mud pits, casing, cementing, and road constraints on road placement and construction may be required (Table 2-9 and Appendix 5-1). Activities within the Superior recharge area would be designed and allowed only if groundwater quality would be protected.

BLM would cooperate with the State of Wyoming on the 208 plan and coordinate the development of water quality plans consistent with BLM programs and RMP recommendations.

An area-wide water quality monitoring program would be established to determine sources and causes of water pollution.

Legal protection of those water uses, both consumptive and nonconsumptive (including instream uses), that are necessary for the accomplishment of Bureau programs would be obtained, so that the beneficial uses may be continued or made possible in the future.



 Streams and Lakes

 Floodplains

Note: Floodplain data is incomplete

Map 24  
**Waters and Floodplains**  
Green River Planning Area

## ALTERNATIVES

See other resource management prescriptions in this document for other restrictions that may apply to watershed or soils management activities.

### Wild Horse Management

**MANAGEMENT OBJECTIVES:** The objectives for management of wild horses would be to protect, maintain, and control a viable, healthy herd of wild horses while retaining their free-roaming nature; to provide adequate habitat for free-roaming wild horses by management consistent with environmental protection; and to provide opportunity for the public to view wild horses. Other resource uses would be maintained and protected

consistent with resource objectives while maintaining viable, healthy herds and appropriate management levels.

**MANAGEMENT ACTIONS:** Horses would be managed within five Wild Horse Herd Management Areas (Map 25). An appropriate management level of 1,105 to 1,600 would be maintained (Table 2-17). An appropriate management level (AML) of 69 to 100 horses in the Little Colorado Desert would be established (see Table 2-17). The new herd area would encompass about 619,541 acres and encompass the allotments identified in Table 2-18. The specific boundary and specific management prescriptions for this area would be identified in an activity plan.

TABLE 2-17

#### WILD HORSE POPULATIONS AND APPROPRIATE MANAGEMENT LEVELS<sup>1</sup> (PREFERRED ALTERNATIVE AND ALTERNATIVE C)

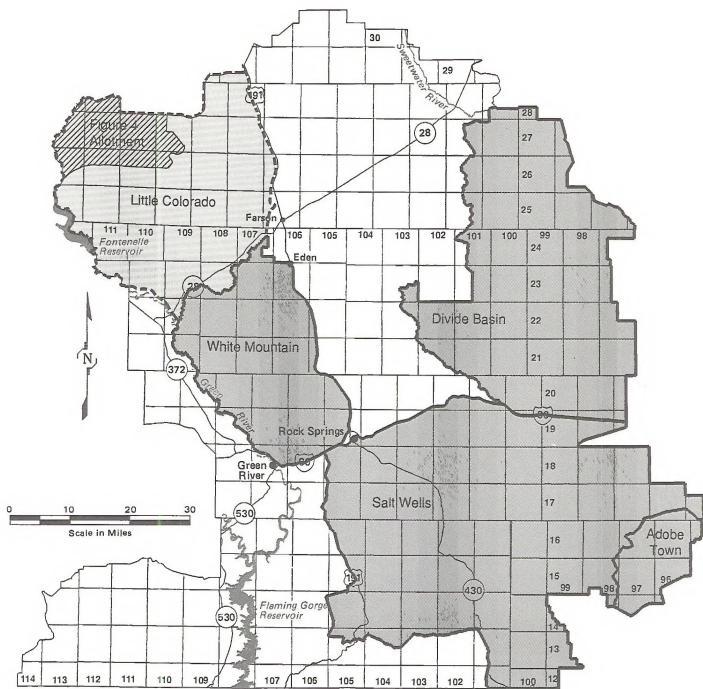
Area	AML	Current Population	Excess Horses	Estimated		Excess Horses to be Removed
				Post-1992 Foaling Population <sup>2</sup>	Summer 1992 Excess Horses	
Great Divide Basin WHHMA	415-600	475	0	570	70	0-155
White Mountain WHHMA	205-300	273	23	327	77	27-122
Salt Wells Creek WHHMA	251-365	623	258	747	382	382-496
Little Colorado Area <sup>3</sup>	69-100	110	10-41	132	63	32-65
Adobe Town <sup>4</sup>	165-235	297	62	357	122	122-192

<sup>1</sup> 1992 Data. Cycle would repeat every two years.

<sup>2</sup> Estimated post-1992 foaling populations are based on a 20 percent increase.

<sup>3</sup> No appropriate management level (AML) has been established pending completion of the Green River Resource Management Plan. Wild horse numbers would be allowed to range from 69 to 100 head, in conformance with the 1981 District Court order. The maximum number of excess wild horses is computed based on the difference between the projected population (122) and the lower end of the range (69). The lower number of excess wild horses (22) is based on the difference between the projected population and the higher end of the range (100).

<sup>4</sup> Only Rock Springs District portion.



- Existing Area
- Interim Area
- Proposed Area

**Map 25**  
**Wild Horse Herd**  
**Management**  
**Green River Planning Area**

## ALTERNATIVES

**TABLE 2-18**  
**ALLOTMENTS PROPOSED**  
**FOR LITTLE COLORADO AREA**

Allotment Number	Allotment Name	Public Land Acres
13017	Eighteen Mile	228,840
13022	Lombard	21,112
13023	Figure Four	114,425
13024	Big Sandy	59,140
13026	Boundary	29,995
13027	Sublette	66,029
<b>Total Acres</b>		<b>519,541</b>

Management plans for 5 wild horse herd management areas in the planning area would be implemented. The existing wild horse management plans would be updated to conform with management plan objectives for vegetation management. A monitoring program would be developed to provide information to support wild horse management decisions.

Specific habitat objectives for herd management areas would be developed. Consideration would be given to desired plant communities, wildlife, watershed, livestock, and other resource needs. The feasibility of water development on the checkerboard land portion of the herd area to better distribute wild horses would be detrimental. Water developments would be proposed in the Rock Springs Allotment primarily to enhance management of wild horses (Appendix 9-4).

Management would insure that adequate forage (17,400 AUMs) would be provided to support appropriate management levels in the herd units and that herds maintain appropriate age, sex, and color ratios.

Fertility and selective gathering programs would be implemented in each of the wild horse areas. These actions would aid in stabilizing populations, managing for conditions and special characteristics, and supply an adoptable population (young horses). Gathering cycles would vary depending upon plan objectives, resource conditions, and needs. See Table 2-19 for estimated populations based on a 3-year gathering cycle. Excess horses would be removed from inside and outside wild horse herd management areas, and a gathering plan would be prepared.

Fencing would be restricted to those situations where it would enhance multiple-use values. All new fences would be constructed in such a manner as to minimize restriction of wild horse movement.

Water developments on crucial winter ranges would be allowed if they conform with wildlife objectives and do not result in adverse impacts to the crucial winter range.

Opportunity for public education and enjoyment of wild horse herds by placing interpretive signs, providing interpretive sites, and access to the herd areas would be provided. Signs providing information on wild horses would be placed in strategic locations such as the rest area east of Rock Springs along Interstate 80, on the Bar-X Road at the junction with I-80, and at the entrance to the Oregon Buttes and Continental Peak areas on Wyoming Highway 28.

WHHMA's would be managed in a natural, healthy state and for an ecological balance among wild horses and land and resource uses.

See other resource management prescriptions in this document for other restrictions that may apply to wild horse management activities.

### Wilderness Resource Management

**MANAGEMENT OBJECTIVE:** The objective for management of the wilderness resource would be to retain the wilderness quality in the "Interim Management Policy and Guidelines for Lands Under Wilderness Review," until Congress acts on designation.

**MANAGEMENT ACTIONS:** Wilderness management plans would be prepared for those WSAs designated by Congress as wilderness. WSAs (225,000 acres) are closed to mineral leasing and location (subject to valid existing rights).

### Wildlife Management

**MANAGEMENT OBJECTIVES:** The objectives for management of wildlife and fish habitat would be to maintain and enhance fish and wildlife resources so that forage production and quality of rangelands and fish and wildlife habitat would be maintained or improved to provide for diversity of wildlife resources.

The objective for management of wetlands/riparian areas would be to achieve a healthy and productive condition for long-term benefits and values in concert with range, watershed, and wildlife needs. Wildlife habitat would be managed to maintain biological diversity of plant and wildlife species within habitat capabilities.

TABLE 2-19

**ESTIMATED POPULATION INCREASE BASED ON 3-YEAR GATHERING CYCLE  
(PREFERRED ALTERNATIVE & ALTERNATIVE C)**

Area	AML	Current Population	Year 1 Post- Season Foaling Population <sup>1</sup>	Year 1 Population	Year 2 Post- Season Foaling Population <sup>1</sup>	Year 2 Population	Year 3 Post- Season Foaling Population <sup>1</sup>	Year 3 Population	Excess Wild Horses
Great Divide Basin WHHMA	415-600	415	50	465	56	521	62	583	0-168
White Mountain WHHMA	205-300	205	25	230	28	258	31	289	0-84
Salt Wells Creek WHHMA	251-365	251	30	281	34	315	383	53	0-102
Little Colorado Area	69-100	69	8	77	9	86	10	96	0-27
Adobe Town <sup>2</sup>	165-235	165	20	185	22	207	25	232	0-94

<sup>1</sup> Estimated post-season foaling populations are based on a 12 percent increase and implementation of a fertility program.

<sup>2</sup> Only Rock Springs District portion.



## ALTERNATIVES

**MANAGEMENT ACTIONS:** Habitat for threatened, endangered, and sensitive plant and animal species would be provided, maintained, or improved through vegetative manipulation, mitigation measures, or other management actions including habitat acquisition and easements.

Suitable wildlife habitat and forage would be provided to support the Wyoming Game and Fish Department 1989 Strategic Plan objectives. Changes within Wyoming Game and Fish Department planning objective levels would be considered based on habitat capability and availability.

BLM would cooperate with the Wyoming Game and Fish Department (WGFD) in preparation of studies for the introduction and re-introduction of native and non-native wildlife and fish species, within the area.

High value wildlife habitats would be maintained or improved through restrictive habitat alteration, appropriate distance and seasonal restrictions, and rehabilitation standards. These habitats include crucial winter habitat, sensitive fisheries habitat, etc.

Disturbed or altered habitat would be restored with the objective to attain desired native plant communities, while providing for wildlife needs and soil stability.

Big game crucial winter ranges and parturition areas would be protected to ensure their continued useability by limiting activities during seasons of use and, if necessary, the amount of habitat disturbed.

No aboveground facilities (power lines, storage tanks, fences, etc.) would be allowed on or within a ¼ mile radius of active sage grouse strutting grounds. Linear disturbances such as low-traffic roads, pipelines, seismic activity, etc., could be granted exceptions. Activities would avoid the area within ¼ mile radius of active strutting grounds from 6 p.m. to 8 a.m. daily from February 1 through May 15. Seasonal restrictions (Table 2-10) would be applied within an additional 1.75-mile radius (447,170 acres) from leks to protect sage grouse nesting habitat. Exceptions to seasonal restrictions may be granted provide the criteria in Appendix 7-1 can be met.

Nesting raptors would be protected by restricting activities within ½ to 1 mile radius of active or historic raptor nesting sites (depends on species) (260,020 acres) (Table 2-10). Active or historic raptor nesting sites would be protected and managed for continued nesting activities (Table 2-9).

Fences that are documented to be a problem to big game migration would be modified to meet BLM fence standards within 4 years of problem identification.

The CMA with the WGFD in annual monitoring, maintenance, and in the development of additional waters would continue as needed. Livestock water developments would be modified where possible or protected to enhance wildlife habitat and to maintain or enhance water quality.

Livestock and wild horse water developments on crucial winter ranges would be allowed if they conform with wildlife objectives and do not result in adverse impacts to the crucial range.

Needed special management and riparian management enclosures would be developed and/or maintained, and existing enclosure plans would be implemented for enhancement of wildlife habitat. Enclosures would be closed to livestock grazing use.

Aquatic, wetland, and riparian habitat would not be suitable for disposal unless opportunities exist for land exchange for lands of equal or better value. Additional lands along perennial waters and wetlands would be acquired. Water rights for BLM water developments would be pursued as appropriate. About 75 percent of riparian areas would achieve proper functioning condition within 10 years.

The "no net loss of wetlands" policy would apply. Executive Order 11990 for the protection of wetlands would apply.

Seasonal restrictions for surface disturbing activities to protect game fish and special status fish populations during spawning would be applied as necessary.

Animal damage control (ADC) would be allowed on public lands in accordance with the Animal Damage Control Act of March 2, 1931 (as amended) and the Memorandum of Understanding between BLM and the USDA Animal and Plant Health Inspection Service (APHIS) which establishes the operational principles of animal damage control on BLM-administered lands.

BLM would annually evaluate the APHIS animal damage control plan including the need for animal damage control, human safety, safety of domestic animals and non-offending animals, areas where animal damage control would be restricted, and analysis of environmental consequences of animal damage control. Public input would be provided and cooperating

## ALTERNATIVES

agencies would include the APHIS, the U.S. Fish and Wildlife Service, and the Wyoming Game and Fish Department.

Methods of control that would be considered would include conventional snaring, trapping, denning, and aerial gunning. The use of sodium cyanide (M-44) devices would be evaluated on a case-by-case basis subject to a site-specific analysis and public participation. Animal damage control methods within crucial big game winter range would be restricted between November 15 and April 30 to avoid displacement or stress to big game.

Habitat improvement plans would be developed for highly developed areas to mitigate wildlife habitat losses. Plans could include habitat expansion efforts, T&E species reintroduction, and population goals and objectives. Such actions as preparing transportation plans and reclaiming roads, seeding, and vegetation enhancement (vegetation treatments, fencing), water developments, and reclamation actions to reduce the amount of existing disturbance would be considered. Areas identified for consideration of such plans would be Little Colorado Desert, including the Fontenelle II and Blue Forest units, Nitchie Gulch, Wamsutter Arch, Patrick Draw, and Cedar Canyon areas.

See other resource management prescriptions in this document for other restrictions that may apply to wildlife management activities.

### Special Management Areas

#### Candidate Plant Species (31,340 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the candidate plants ACEC would be to protect candidate plant species and their crucial habitats.

**MANAGEMENT ACTIONS:** The area occupied by four candidate plant species would be designated an ACEC (about 440 acres). Up to an additional 30,900 acres may be added to the ACEC if it is determined that they contain candidate plant or crucial candidate plant habitat. Management and protection to actual plant locations would be provided for *Arabis pusilla*, *Astragalus proimanthus*, *Descurainia torulosa*, or *Thelesperma pubescens* (Map 26).

Locations of candidate plants and crucial and/or potential habitats would be identified. Known locations of candidate plant species communities (33 locations;

about 440 acres) (see Map 4) would be protected and closed to: 1) surface disturbing activities that could adversely affect the candidate plant species and their habitat (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-9 and Table 2-5); 2) the location of new mining claims (withdrawal from mineral location would be pursued); 3) oil and gas leasing; 4) mineral material sales; 5) off-road vehicular travel including those used for geophysical exploration activities; and 6) the use of explosives and blasting.

Searches would be conducted to identify additional areas for plant locations. Habitat needs would be determined and actual prescriptions would be specified. The window for inventory would be from May through August. As new populations are identified, they would be added to the ACEC. After inventory, boundaries would be adjusted to actual plant locations and habitat needs. Should a plant species be de-listed, the ACEC part or portion attributed to that plant species would be discontinued. The ACEC acreage could thus increase or decrease depending upon the results of the searches or if a plant species should be delisted.

Approximately 1,900 acres on Pine Butte would be acquired to enhance management for the maintain tansymustard (*Descurainia torulosa*).

Searches would be required on approximately 30,900 acres of potential habitat prior to projects. If the plant were not found, occupancy would be allowed with proper guidelines and mitigation. If plants were located, the plant site and its associated habitat would be avoided and not occupied.

Actual and potential plant sites (about 31,340 acres) would be closed to fire suppression activities other than on existing roads and trails or by air.

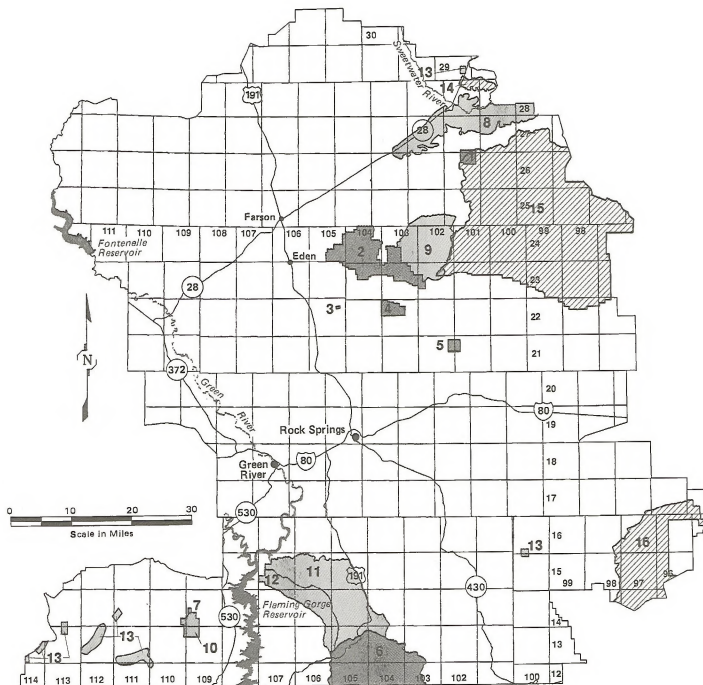
#### Cedar Canyon ACEC (2,550 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Cedar Canyon ACEC would be to provide protection and enhancement of cultural values, scenic values, and wildlife habitat.

**MANAGEMENT ACTIONS:** The Cedar Canyon ACEC would be retained.

The entire ACEC would be open to consideration for mineral leasing with restrictions to protect cultural and wildlife values, particularly raptor, big game winter range, and watershed values (Table 2-10).





**Existing ACECs**

- 1 Oregon Buttes
- 2 Sand Dunes
- 3 White Mountain Petroglyphs
- 4 Cedar Canyon
- 5 Natural Corals
- 6 Red Creek
- 7 Pine Spring

**Proposed ACECs**

- 8 South Pass Historic Landscape
- 9 Steamboat Mountain
- 10 Pine Spring Expansion
- 11 Sage Creek
- 12 Currant Creek
- 13 Candidate Plant Species

**Other Areas**

- 14 Lander Cutoff
- 15 Red Desert Area
- 16 Monument Valley

Note: Tri-State Monument is composed of Currant Creek, Red Creek, and Sage Creek

**Map 26**  
**Preferred Alternative**  
**Special Management Areas**  
**Green River Planning Area**

## ALTERNATIVES

Prescribed management actions for livestock grazing would include continuous monitoring and establishment of riparian objectives.

Highly erodible soil areas throughout the ACEC would be managed to maintain or reduce erosion levels and improve vegetation cover. Guidelines necessary to protect these areas would be developed. Surface disturbing activities may require approval of engineering design plan. Designated roads would be upgraded, maintained, and properly surfaced in accordance with standards.

In conformance with ACEC objectives, the various recreational activities (e.g., camping, picnicking) that occur in the area would be developed, maintained, preserved, or enhanced to provide for an optimum and satisfying visitor experience. Facilities and projects would be signed to provide information about sites in the area and directions for travel through the ACEC.

The ACEC would be closed to over-the-snow vehicles. Lands would be acquired to enhance access to this ACEC. Signing and closing of all nonessential roads and trails would be accomplished along with providing legal and physical access.

The ACEC would be managed in accordance with Class II VRM prescriptions, with visual resource management standards to protect, maintain, and enhance the visual resource values. All future facilities would be designed to blend with the landscape, painted, and disturbed areas would be seeded to keep visual resource impacts to a minimum.

A reclamation plan for disturbed areas would be prepared to restore lost habitat. Reclamation of some areas may be required prior to initiation of new disturbance.

The petroglyph site plus a ½ radius (500 acres) would be closed to: 1) surface disturbing activities that could adversely affect the petroglyph site (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-9 and Table 2-5); 2) the location of mining claims (withdrawal from mineral location would be pursued); 3) mineral material sales; 4) off-road vehicular travel including those used for geophysical exploration activities (this includes the ½ mile of road to the petroglyphs); 5) the use of explosives and blasting, and vibrosoles operations; and 6) the use of fire retardant chemicals containing dyes.

Coal leasing would be considered; however, no surface mining and no facilities would be allowed on the petroglyphs or within a ½ mile radius (about 500 miles).

The remainder of the Cedar Canyon ACEC (about 2,050 acres) would also be closed to surface mining methods and open to leasing consideration for only subsurface mining methods. However, seasonal uses and types or placement of surface facilities, activities, etc., related to subsurface mining in this area, would be allowed on a very limited basis. About 643 acres of Federal Surface State Coal lands would be affected.

The remaining 2,050 acres of the ACEC would be open to other surface disturbing activities, with constraints to protect resource values if the area could not be avoided and disturbance from activities could be reclaimed and blend with the landscape. New rights-of-way should follow existing roads and rights-of-way wherever feasible (Table 2-5). Surface mining would not be allowed; however, limited surface facilities could be considered if they meet the management requirements for the ACEC.

The 2,050 acres would be open to: 1) the location of mining claims; 2) mineral material sales; and 3) seismograph activity including the use of explosives and blasting, provided ACEC values could be protected.

Off-road vehicular travel, including those used for geophysical exploration activities, would be limited to designated roads and trails. Off-road vehicle activities would be restricted during winter and spring to protect wildlife values.

### Greater Sand Dunes ACEC (41,640 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Greater Sand Dunes ACEC would be to preserve and protect the integrity of the unique values for future use and enjoyment, including the unusual geological features associated with the sand dunes and the Boar's Tusk, and the biological interrelationships supported by the dunes, especially the Steamboat desert elk herd, mule deer herd, and other dependent plants and animals.

**MANAGEMENT ACTIONS:** The Greater Sand Dunes ACEC (41,640 acres) would be retained.

#### General ACEC

The ACEC would be managed for Class II VRM values. The visual impacts of existing facilities (e.g.,

## ALTERNATIVES

producing wells) would be evaluated and, to the extent reasonable, the impact mitigated.

Any surface disturbing activities within the Wasatch and Green River Formations would require paleontological clearance. Surface disturbing activities would be managed to avoid recreation sites.

The ACEC and the area within one mile or the visual horizon of the ACEC would be an avoidance area for new rights-of-way (approximately 70,850 acres). In particular, large kilovolt powerlines would be managed to avoid the ACEC. Oil and gas development prescribed in the following Eastern Portion discussion is excluded from this restriction.

The ACEC would be closed to mineral material sales.

Livestock grazing would continue at established grazing levels. Monitoring of grazing use within the allotments to ensure utilization maintenance and improvement of the vegetative resource would occur. Key plant species utilization would not exceed 50 percent of the total annual growth.

Maintenance and use of existing necessary rangeland improvements would be allowed. Proposed rangeland improvements must be part of an allotment management plan, be consistent with the objectives of the ACEC, and have an environmental assessment prepared which would consider the authorization of rangeland improvement construction and/or maintenance, and the use of motor vehicles, motorized equipment, and mechanical transport.

Materials used for new or existing improvements must harmonize with the natural character of the area to reduce the impact of artificial objects on the natural environment.

Wild horse use in the ACEC would be managed as part of the natural ecosystem and would be consistent with the Divide Basin Wild Horse Management Plan and ACEC objectives. No traps would be constructed in the entire ACEC.

To support the diversity of wildlife species occurring within the ACEC, wildlife habitat would be protected, maintained, and enhanced. Crucial winter range in the ACEC area would be maintained as an essential component to the Steamboat Mountain-Sands elk herd.

Habitat improvement projects on the ponds for bird, amphibian, and mammal use would be developed after habitat condition and project suitability were determined.

Interpretive materials and educational programs including a wildlife picture brochure would be developed to describe wildlife and cultural resource values of the 41,640-acre ACEC.

Native vegetation would be maintained and protected to allow natural succession to continue free from unnecessary surface disturbance. Revegetation of disturbed areas with big sagebrush and other adapted shrub seeds would be required where appropriate to help improve big game habitat.

A diversity of non-motorized recreation uses, including hiking, bird-watching, photography, sightseeing, and hunting, would be encouraged. Appropriate recreation facilities would be developed and maintained. Two roads would be designated as part of the Tri-Territory backcountry byway (see Map 20). Camping would be restricted to the BLM 14-day limit, and subject to "Pack In-Pack Out" requirements for trash, etc. (see Recreation Resource Management for this alternative).

### Western Portion

Management of the ACEC included in Buffalo Hump and Sand Dunes WSAs (25,250 acres in the western portion of the ACEC) is guided by the "Interim Management Guidelines for Lands Under Wilderness Review." Wilderness management would not be addressed unless management of the area is more stringent than either the interim management policy or wilderness policy.

The 25,250-acre western part of the ACEC would be closed to motorized vehicle travel, including over-the-snow-vehicles, to maintain the unique naturalness, solitude, and primitive and unconfined recreational opportunities.

This portion would remain closed to oil and gas leasing (Table 2-9), mining claims, and geophysical activities. Withdrawals would be pursued as necessary (Table 2-6).

The roughly 4,360 acres in the coal potential area would be unsuitable for further consideration for coal leasing.

Lands would be acquired through exchange to improve the manageability of the area (1,920 acres).

### Eastern Portion

The eastern portion of the ACEC (about 16,390 acres) would be open: 1) to mineral leasing and devel-

## ALTERNATIVES

opment activities, subject to constraints to protect ACEC values; 2) for further construction and development and surface occupancy on both stabilized and non-stabilized sand areas if analysis indicates that ACEC values would not be adversely affected; 3) for additional producing wells or temporarily shut-in wells provided the number would not exceed three wells per section within the existing developed area (approximately 6,000 acres) and one well per section in the undeveloped area to the east (approximately 10,390 acres) (the authorizing officer may consider additional wells if a site specific analysis determines that ACEC values would be retained; unitization may be required prior to drilling); 4) to activities that would conform with visual resource management classifications and prescriptions and consider the affects to visual resources; and 5) to geophysical activities including vehicular travel provided resource protection would be ensured and actions conform with the ORV plan.

Developments would not interfere with or disrupt access to or use of developed and semi-developed recreation sites.

Approximately 9,840 acres with coal potential would be closed to surface mining and surface facilities.

Surface disturbing activities, geophysical activities, and drilling, completion, and production facility installation activity would be restricted on crucial big game winter ranges and birthing areas. Exception from this restriction may be approved if conditions described in Appendix 7-1) apply. Once an oil and gas drilling/completion operation starts, it would be allowed to be completed into or through the winter. Decision points for shutdown due to unacceptable winter conditions would occur between pad construction and drilling startup, and between drilling/completion and production facility installation.

Surface water, soils, and shallow aquifers would be protected from development activities by utilizing such practices as a closed drilling system or a 12-mil or thicker synthetic liner. Pit liners would be removed prior to reserve pit reclamation. Ponds would not be used as water sources for development activity.

All new pipelines and powerlines within the existing area of development would be buried adjacent to access roads or within existing concentration areas containing such lines. All new pipelines within the stabilized dune areas would be installed on the ground as surface lines to avoid unnecessary disturbance of vegetation. Powerlines could be buried. Existing surface pipelines would be monitored by the oil and gas operators to

determine potential hazards to ORV users. Identified hazards would be marked to improve visibility.

Any proposed activity or surface use that would involve surface disturbance (e.g., construction activities, such as roads, well pads, pumping or storage facilities, pipelines, or geophysical exploration, etc.) would be accompanied by appropriate engineering design, geotechnical analysis, mitigation planning, etc.

Abandoned pipelines, unnecessary facilities (e.g., snow fence), etc., in unstabilized dune areas would be removed.

In cooperation with the oil and gas operators, a recreation user map would be developed that shows the locations of aboveground facilities (e.g., pipelines, well production facilities, snow fences, etc.).

About 10,390 acres would continue to be designated open to off-road vehicle travel on the active sand dunes and limited to existing roads and trails on 6,000 acres in the stabilized dune areas.

### Crookston Ranch and Boar's Tusk

The values of Crookston Ranch and Boar's Tusk would be preserved.

Crookston Ranch and the Boar's Tusk (130 acres) would be closed to surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-9 and Table 2-5); to mineral material sales for sand, gravel or other types of construction or building materials; and to the use of explosives and blasting. Additionally, the area within a ½ mile radius of Boar's Tusk would be closed to blasting and explosive charges (about 500 acres).

The Crookston Ranch and Boar's Tusk areas (130 acres) would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites. Protective rights-of-way would be issued to provide protection from mineral location for Crookston Ranch and recreation sites.

Off-road vehicle use would be limited to designated roads and trails around these two sites, except for the road around Boar's Tusk which would be closed.

Maximum fire suppression activity would be used to protect the standing historic structures at Crookston Ranch.



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The Boar's Tusk-Killpecker Sand Dune field (about 1,400 acres) would be managed for natural and geologic values, would be unacceptable for surface mining activities, and would be considered closed to any surface mining activity or any surface facilities, to protect unique geological and ecological features. The Crookston Ranch would also be managed as an area closed for coal mining activities, and no surface mining or surface facilities would be allowed.

### Monument Valley Area (64,300 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Monument Valley area (64,300 acres) would be to continue to manage the area for multiple use and not as an ACEC or special management area, allowing development and public use with necessary consideration and protection of wildlife, geologic, raptors, cultural, watershed, scenic, and scientific values.

**MANAGEMENT ACTIONS:** The Monument Valley area would not be designated an ACEC.

A portion of the Monument Valley area is within the Adobe Town Wilderness Study Area. Wilderness management, recommendations, and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The Wilderness Study Area acreage would not be identified for specific management unless the management is more stringent than either the Interim Management Policy or Wilderness Management.

The area would be open to: 1) location of mining claims and 43 CFR 3809 regulations would apply (the oil shale withdrawal would be revoked); 2) consideration for mineral leasing, exploration, and development provided mitigation could be applied to retain the resource values (Table 2-10 and Table 2-9); 3) consideration for mineral material sales with the same constraints applied all surface disturbing activities; and 4) allow development and public use with necessary consideration for wildlife, raptors, cultural, watershed, and scientific values.

A paleontological survey would be required prior to surface disturbing activities. The standard Section 106 compliance process would apply for cultural resource management.

Surface disturbing activities including rights-of-way would be managed to avoid slopes greater than 25 percent (19,450 acres) and highly erosive areas unless a plan can be developed to mitigate adverse affects to the resource values.

Off-road vehicle travel would be limited to designated roads and trails. A transportation/road plan would be prepared to manage public use of the area and to keep the miles of road to a minimum.

The entire area would be managed for Class II VRM values and all management actions would be designed and located to blend into the natural landscape and to not be visually apparent to the casual viewer. No new recreation sites would be developed and limited interpretive signing would be accomplished (mostly roads and access routes).

Construction of wild horse traps and range improvements would be allowed provided the objectives of the area could be met. Areas with highly erosive soils or slopes would not be suitable for wild horse traps and range improvements. In the remaining area, improvements would be considered with protection provided for slopes, raptors, and watershed resources. Designated roads and trails would be utilized by all vehicles.

### Natural Corrals ACEC (1,276 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Natural Corrals ACEC would be to protect and enhance the cultural, historical, recreation, and geological values within the area. Other resource actions would comply with the objectives, including any restrictions required to protect the values of the ACEC.

**MANAGEMENT ACTIONS:** The Natural Corrals ACEC would be retained.

The entire ACEC would be open to consideration of oil and gas leasing.

The area would be closed to surface disturbing activities that could adversely affect ACEC resources (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-9 and Table 2-5); to surface coal mining activity and related facilities due to conflicts with raptor nests, sites on the National Register of Historic Places, and conflicts with crucial range for deer and elk; and to mineral material sales.

The existing withdrawal would be retained, closing 357 acres to the location of mining claims (Table 2-6). The public water reserve withdrawal in section 12 would be revoked in the future since the land is now patented. A filing for a water right would be pursued if it is deemed important.

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The 20-acre NRHP site would be closed to geophysical activities.

The ACEC would be open to consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the resources. Activities would be designed to increase public awareness of the significance of the area.

Cultural resource values would be protected within the ACEC by stabilizing features and limiting activities (e.g., surface disturbing uses) that would adversely affect the cultural resources. Crucial winter range seasonal restrictions and raptor nesting restriction would apply to disrupting activities (Table 2-10).

The area would be managed for Class II visual resource management values and all management actions would be designed and located to blend into the natural landscape and to not be visually apparent to the casual viewer.

The existing road/trail from the spring located in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$  of Section 18 and the designated archaeological NRHP site (20 acres) would remain closed to vehicle use. In the remainder of the area, off-road vehicle travel would be limited to designated roads and trails. The ACEC would be open to over-the-snow vehicles, except the 20-acre NRHP site, which would be closed.

Prescribed management actions for livestock grazing would include continuous monitoring, establishing riparian objectives, and encouraging cooperative riparian management. The wild horse herd management prescription would consist of monitoring to ensure resources would be protected.

In conformance with the ACEC objectives, the various recreational activities such as camping, picnicking, winter sports, hunting and fishing opportunities that occur in the area would be developed, maintained, preserved, or enhanced to provide for an optimum and satisfying visitor experience. Camping would be restricted to 14 days. A "Pack In-Pack Out" policy would apply for camping. Camping around the spring would not be allowed.

### Oregon Buttes ACEC (3,450 acres)

**MANAGEMENT OBJECTIVES:** The objectives for management of the Oregon Buttes ACEC would be to protect and enhance the scenic integrity as a historic landmark. In addition, this ACEC would serve to protect the significant wildlife values that are found in the area.

**MANAGEMENT ACTIONS:** The Oregon Buttes ACEC would be retained.

A portion of the ACEC is within the boundaries of a WSA. Wilderness management, recommendations, and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The wilderness study area acreage will not be identified for specific management unless the management is more stringent than either the Interim Management Policy or wilderness management.

The area would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-9 and Table 2-5); to mineral material sales for sand, gravel, or other types of construction or building materials; and to off-road vehicle travel, including those utilized for seismograph operations.

The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area. Seasonal restrictions for raptors and big game parturition areas would apply (Table 2-10).

The Oregon Buttes area would be managed under the prescriptions for VRM Class II values. Management actions would be designed to blend into the natural landscape and retain the existing character of the landscape.

### Pine Springs ACEC (90 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Pine Springs ACEC would be to enhance protection of cultural, historic, and prehistoric resource values.

**MANAGEMENT ACTIONS:** The existing Pine Springs ACEC would be expanded to 6,030 acres.

Approximately 5,200 acres of the Pine Springs Expansion area are in the Devils Playground/Twin Buttes WSA which is managed under the "Interim Management Policy for Lands Under Wilderness Review." Wilderness management would not be addressed unless management of the area is more stringent than either the interim management policy or wilderness policy.

The area would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-9 and Table 2-5); to mineral location and an additional

## ALTERNATIVES

withdrawal of 730 acres pursued (Table 2-6); to mineral material sales for sand, gravel, or other types of construction or building materials; and to off-road vehicle travel, including those utilized for seismograph operations with the exception of 730 acres where vehicle travel would be limited to existing roads and trails.

The existing Pine Springs site (90 acres) would be closed to all geophysical operations and to the use of explosives and blasting.

The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area; maintenance of the existing spring development; and additional spring developments if the action would be in conformance with cultural values.

The entire area would be managed for Class III VRM values, and management actions on the lands classified as VRM Class III lands would be designed to partially retain the existing character of the landscape.

### **Red Desert Watershed Area (341,060 acres)**

**MANAGEMENT OBJECTIVE:** The management objective for the Red Desert Watershed Area would be to continue to manage the area (341,060 acres) for multiple use and not as a special management area. Resource prescriptions and objectives throughout this alternative would apply (Map 26).

**MANAGEMENT ACTIONS:** The boundary that would be considered the Red Desert Watershed Area would include public lands north of the checkerboard boundary within the Great Divide Basin.

A portion of the Red Desert Watershed Area encompasses portions of six WSAs (Alkali Draw, Alkali Basin-East Sand Dunes, Honeycomb Buttes, Oregon Buttes, Red Lake, and South Pinnacles). Wilderness management recommendations and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The Resource Management Plan would not address wilderness recommendations or management prescriptions for the WSAs. The wilderness study area acreage would not be identified for specific management unless the management is more stringent than either the interim management policy or wilderness management.

The area would be managed to ensure developments and activities conform with the concepts of open space. The visual resource values of the area would be retained

and site specific visual resource reviews (inventories) would be conducted prior to allowing activities that may affect these values.

Mineral exploration and development, surface disturbing activities, and seismic activities would continue where acceptable subject to the management guidelines provided in the Minerals section. Approximately 2,500 acres would be closed to surface disturbing activities to protect candidate plants and ACEC values Table 2-9. Seasonal restrictions for protection of raptors, big game crucial winter range, and calving/fawning areas would be managed as shown in Table 2-10. The exception criteria described in Appendix 7-1 would apply.

Approximately 2,860 acres could be developed for coal (see Coal Decisions). Most of the area would be open to consideration for salable minerals activities and mineral location. The existing coal and stock driveway withdrawals would be revoked.

About 7,760 acres would be closed to mineral location and salable mineral activity, to protect the South Pass Historic Landmark (see the South Pass Historic Landmark Section).

The preferred route for rights-of-way would be the east-west window described in the Lands and Realty Management section. Other areas would be considered if in conformance with wildlife, watershed, cultural, and scenic resources (see Table 2-5). Overhead powerlines would not be permitted.

Off-road vehicle travel would be managed to provide opportunities in conformance with other resource objectives. Approximately 93,000 acres would be closed to ORV use, and the remainder of the area would be limited to existing roads and trails. Recreational activities and uses would be maintained. A Tri-Territory Loop backcountry byway would be established.

Forage would continue to be provided for wild horses in the area. Vegetation resources would be managed for continued livestock grazing and wildlife uses in accordance with the management objectives for those resource values. Objectives would be outlined in AMPs, HMPs, and wild horse herd management plans.

Candidate plant species, the ACEC values in Oregon Buttes, and cultural resource sites such as the South Pass Historic Landmark would be protected. Specific management prescriptions for those areas may be found in the particular special management area section of this document.



## ALTERNATIVES

### South Pass Historic Landscape (54,840 acres)

**MANAGEMENT OBJECTIVES:** The management objective for the area would be to protect the visual and historical integrity of the historic trails and surrounding vandscape.

**MANAGEMENT ACTIONS:** The South Pass Historic Landscape would be designated an ACEC (54,840 acres) and would be nominated to the National Register of Historic Places as a historic landscape.

The South Pass Historic Landscape would encompass the viewshed along the Oregon, Mormon Pioneer, California, and Pony Express trails and the Lander Cutoff (about 16.42 miles of trail with a 3-mile wide corridor along the Oregon, Mormon Pioneer, and California trails, and a 1-mile wide corridor along the Lander Cutoff) (Map 26). Approximately 54,840 federal acres would be affected within the historic trails corridor over South Pass.

The landscape would be open to consideration of mineral leasing and mineral material sales, provided the visual and cultural concerns could be mitigated. Most of the area would also be open to exploration and development of locatable minerals. A plan of operations would be required to address measures to mitigate affects to the vandscape before any mine claim activity would be allowed.

About 33,000 acres surrounding the trails and visible from the trails, would be closed to surface disturbing activities that could adversely affect the viewshed (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-9 and Table 2-5). Off-road vehicle travel would be limited to designated roads and trails.

About 21,840 acres surrounding the trails that are shielded from the trail by topography would be open to development activities if they would be subordinate to the existing landform and not visible from the historic trail and provided that environmental analysis indicates that the visual integrity of the area can be maintained. The prescriptions for the management of historic trails would apply to these areas. Off-road vehicle travel would be limited to existing roads and trails.

The South Pass Historic Landmark (the actual South Pass geographic location, about 5,260 acres) would be closed to: 1) surface disturbing activities that could adversely affect the site (e.g., activities associated with mineral exploration and development; construction of

roads, pipelines, powerlines; etc.) (Table 2-9 and Table 2-5); 2) the location of mining claims (withdrawal from mineral location would be pursued); and 3) mineral material sales. Off-road vehicle travel would be limited to designated roads and trails.

A cultural resource management plan would be written for the historic trails corridor and the National Historic Landmark.

Rights-of-way would be managed to avoid the area. The area would not be considered as a preferred route for linear facilities. Small feeder lines could be allowed if analysis indicates that the visual integrity of the area would not be compromised. Rights-of-way on existing roads in the area could be allowed if they did not compromise the visual integrity of the area.

All activities would conform with the requirements of VRM Class II values and all management actions would be designed and located to blend into the natural landscape and to not be visually apparent to the casual viewer. The scenic values of the Highway 28 visual corridor (3 linear miles) would be protected.

Vibroiseis activity would not occur within 300 feet of the historic trails. Shothole activity would not be allowed along the trails. Other geophysical operations would be allowed within the historic trails corridors (16.42 miles) if site specific analysis determines that no effects adverse to the visual integrity of the trails would occur.

The area would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection of the landscape.

### Steamboat Mountain Area (43,010 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Steamboat Mountain Area would be to provide suitable habitat to maintain the continued existence of the Steamboat elk herd (Map 26).

**MANAGEMENT ACTIONS:** The Steamboat Mountain area would be designated an ACEC (43,010 acres).

The entire area would be closed to oil and gas leasing until a leasing plan could be completed (Table 2-9). The plan would identify any suitable areas for development and surface occupancy, based on area objectives. Upon completion of this plan, large contiguous areas may be offered for lease, offered for lease with an NSO stipulation, or may be withheld from leasing entirely. A site specific environmental analysis would be performed on each lease action.

## ALTERNATIVES

There are approximately 60 leases within the proposed Steamboat Mountain ACEC with expiration dates of 1992-1998. All leases that expire would be withheld until completion of the plan. Drilling applications received before leases expire would require a plan of development to assure no undue degradation would occur to the elk herd. This plan must be approved prior to APD approval. Areas within the lease where drilling would be allowed to occur would be identified in the plan of development along with roads, etc.

All existing leases held by production would be honored and would be allowed to continue operation under existing lease stipulations. Conditions of Approval could be added to these leases under extenuating circumstances to protect the Steamboat elk herd.

Although a protective withdrawal for locatable minerals would not be pursued at this time, any plan of operations submitted by a mining claimant must address the impacts of mining on the Steamboat elk herd to ensure no unnecessary or undue degradation would occur. A site specific environmental analysis would be required on each action. A protective withdrawal from locatable minerals may be pursued in crucial habitats identified in the oil and gas leasing plan.

Approximately 10,000 acres of coal potential area occurs within the Steamboat Mountain proposed ACEC. Subsurface mining only for coal would be allowed with a plan of development assuring adequate measures would be taken to protect and maintain the elk herd. Surface facilities relating to subsurface mining would be considered on a case-by-case basis. All existing and proposed above ground facilities would be landscaped or painted to harmonize with the natural landscape.

The proposed ACEC would be closed to mineral material sales and to other surface disturbing activities until the leasing plan is completed and areas that could be open to such activities identified.

The area would be open to actions that would enhance management objectives including consideration of activities such as fencing interpretive signs, or barriers.

Linear rights-of-way and geophysical activities could be acceptable if impacts to the elk and their habitat could be mitigated (Table 2-5). Communication sites would not be allowed.

Off-road vehicle travel would be limited to designated roads and trails. The May 1-July 1 seasonal closure for

off-road vehicle travel currently in effect would still apply. Transportation planning would be completed.

All activities would conform with the requirements of VRM Class II values and all management actions would be designed and located to blend into the natural landscape and to not be visually apparent to the casual viewer.

The unique geological and ecological features in the area would be protected and public interpretation of these features provided.

Vegetation management would be designed to maintain, preserve, or enhance big game forage and cover requirements. Fire activities would be designed to meet these objectives. Management of forest products would be limited to activities designed to control insects and disease. Dead standing trees would be managed under the "Animal Inn" program to help maintain biological diversity. Reforestation and reforestation within the proposed ACEC would be done with native species.

Any additional forage that becomes available would be allocated for wildlife use as first priority to improve quality and quantity of forage. Wild horse herds would continue to be maintained within wild horse management population objectives.

An overlapping area of elk crucial wintering and parturition areas within the elk herd unit (30,000 acres) outside and adjacent to the Steamboat Mountain proposed ACEC (Map 26) would be managed to allow for progressive development of one or two areas at a time. Satisfactory abandonment and reclamation of an area or field would be required prior to developing another area.

### Tri-State Monument Area (131,780 acres)

The Tri-State Monument area would consist of the Currant Creek/Sage Creek watersheds and the existing Red Creek ACEC.

**MANAGEMENT OBJECTIVE:** The management objective of the area would be to improve and/or enhance watershed values. This would include improving channel stability, vegetation diversity and abundance, water quality, and fish habitat. All resource uses would be managed in support of watershed and Colorado River cutthroat trout management objectives.

**MANAGEMENT ACTIONS:** The Tri-State Monument area (131,780 acres) would be designated an ACEC.

## ALTERNATIVES

### General Area

The actions listed under this general heading apply to all portions of the proposed ACEC unless otherwise noted.

The proposed Tri-State Monument ACEC would be managed: 1) as an avoidance area for rights-of-way and surface disturbing activities and 2) to protect and enhance management of wildlife, scenic, fisheries, and watershed resources (Table 2-9 and Table 2-5). The area would be closed to mineral material sales (Table 2-13).

The area would be open for consideration of activities such as fencing, interpretive signs, barriers, or sediment structures to meet resource objectives.

Livestock grazing objectives would be re-evaluated and, where necessary, modified to meet watershed, water quality, and riparian objectives. Riparian areas would be improved to proper functioning condition. Grazing systems would be designed to provide rest and/or deferment and optimum desired plant cover.

Timber harvest levels would be adjusted and harvest practices applied to meet watershed, fisheries, and wildlife prescriptions.

Although big game habitat would improve, additional or improved forage would be reserved for watershed purposes. Big game numbers may be kept at current levels or reduced, until the watershed recovers. Threatened and endangered species and sensitive species habitat would be enhanced. Re-introduction of Colorado River cutthroat trout and other native species would be considered if consistent with watershed and riparian objectives.

Fire suppression would be limited to containment at ridgetops around Currant Creek. Firefighting equipment would be limited to designated roads and trails. Heavy equipment would not operate in areas closed to surface disturbing activities. Fires in timber stands would be suppressed immediately.

Vegetation treatments would conform with watershed, wildlife, and fisheries objectives. The inner gorge of intermittent and ephemeral drainages should be treated in such a manner as to leave mosaic patterns or untreated areas of vegetation. No more than 50 percent of the cover in the inner gorge area may be treated.

Herbicide loading sites would be located at least 500 feet from live water or riparian areas. Herbicide treat-

ments of noxious weeds would require a site specific analysis. Riparian vegetation damage or impacts to aquatic life would not be allowed.

Camping would be allowed within 200 feet of water if no damage to watershed, water quality, and fisheries values would occur.

The area would be limited to designated roads and trails for off-road vehicle travel. Transportation planning would be done to identify designated travel routes.

Approximately 9,650 acres of the coal potential area occur within the proposed ACEC. Subsurface mining only for coal would be allowed. Surface facilities relating to subsurface mining would be considered on a case-by-case basis.

### Currant Creek Portion

**MANAGEMENT OBJECTIVE:** The Currant Creek Drainage would be managed to maintain the watershed and the existing habitat for Colorado River cutthroat trout.

**MANAGEMENT ACTIONS:** The Currant Creek Drainage (23,740 acres) would be designated as part of the Tri-State Monument ACEC.

The drainage would be closed to: 1) surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (Table 2-9); 2) mineral material sales; and 3) mineral location. It would be an exclusion area for rights-of-way (Table 2-5). The area would be closed to sodium prospecting (Table 2-11). A 23,740-acre withdrawal would be pursued.

Powerlines could span the northern part of the Currant Creek drainage provided environmental analysis indicates that scenic, watershed, and fisheries objectives could be met and no construction activities would take place in the drainage.

The drainage would be open for those management actions or facilities that would facilitate management of the area.

Off-road vehicle travel on 23,740 acres would be limited to designated roads and trails. Some roads and trails would be closed and reclaimed as a result of transportation planning. Transportation planning would include proper road location, construction, reconstruction, design, and reclamation.

## ALTERNATIVES

Acquisitions along Currant Creek and Trout Creek, in support of Colorado River cutthroat trout, would be pursued (Appendix 8-3).

### Sage Creek Portion

**MANAGEMENT OBJECTIVES:** The Sage Creek watershed would be managed to maintain the watershed values.

**MANAGEMENT ACTIONS:** The Sage Creek Watershed (52,670 acres) would be designated as part of the Tri-State Monument ACEC.

The drainage would be an avoidance area for rights-of-way (Table 2-5).

Off-road vehicle travel would be limited to designated roads and trails.

### Red Creek ACEC Portion

**MANAGEMENT OBJECTIVES:** The objectives for management of the Red Creek ACEC would be to: 1) reduce the amount of sediment currently being delivered to the Green River as a result of sheet and rill erosion, gullying, and channel erosion occurring in the Red Creek area, 2) improve aquatic habitat conditions along the Green River in Utah below Red Creek, 3) reduce gully and channel erosion where roads and water tables are threatened, and 4) increase vegetative production in the Red Creek Watershed.

**MANAGEMENT ACTIONS:** The existing Red Creek ACEC (about 55,880 acres) would become part of the proposed Tri-State Monument ACEC.

The 50,120 acres would be closed to: 1) surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.); 2) leasing for oil and gas (Table 2-9); 3) mineral material sales; and 4) mineral location. Red Creek would be an avoidance area for rights-of-way (Table 2-5). A 50,120-acre withdrawal would be pursued.

The 50,120 acres would be open for those management activities or facilities that would facilitate management of the area. The area would be open for consideration of activities such as fencing, interpretive signs, barriers, or sediment structures to meet resource objectives.

A portion of the Red Creek area is within the Red Creek Wilderness Study Area (about 8,020 acres).

Wilderness management recommendations and alternatives are addressed in the Rock Springs District Wilderness Final EIS. This RMP will not address wilderness recommendations or management prescriptions for the WSAs unless the management is more stringent than either the interim management policy or wilderness management.

The 8,020 acres of the ACEC would be closed to motorized vehicle travel, including over-the-snow-vehicles to maintain the unique naturalness, solitude, and primitive and unconfined recreational opportunities.

This portion would remain closed to oil and gas leasing (Table 2-9), mining claims, and geophysical activities.

Those areas within the Red Creek watershed that have been identified as 1) highly erosive soils, 2) subject to slumping, 3) slopes greater than 25 percent, and 4) riparian areas would be protected to minimize accelerated erosion and increased sedimentation into the Green River/Colorado River system. Approximately 50,120 acres or 74 percent of the watershed would be affected.

The right-of-way concentration area through Red Creek would be closed to additional rights-of-way. An alternate route east and a window south along Highway 430 would be established.

The remaining 5,760 acres would be open to leasing and surface disturbing activities subject to the prescriptions described for the general area.

Off-road vehicle travel on 47,860 acres would be limited to designated roads and trails. Some roads and trails would be closed and reclaimed as a result of transportation planning. Transportation planning would include proper road location, construction, reconstruction, design, and reclamation.

### White Mountain Petroglyphs ACEC (20 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the White Mountain Petroglyphs ACEC would be to protect cultural resource values from degradation and provide for wildlife and scenic values and Native American concerns. Public awareness and use of the area as an educational site would be encouraged.

**MANAGEMENT ACTIONS:** The White Mountain Petroglyphs ACEC would be retained.



## ALTERNATIVES

The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

The ACEC would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-9 and Table 2-5); to the location of mining claims (and the existing withdrawal retained) (Table 2-7); to mineral material sales for sand, gravel, or other types of construction or building materials; and to the use of explosives and blasting. The ACEC would also be closed to off-road vehicular travel including vehicles used for geophysical exploration activities (Table 2-15), and to the use of fire retardant chemicals containing dyes.

The ACEC would be managed for Class III visual resource values. Management actions on the lands classified as VRM Class III lands would be designed to partially retain the existing character of the landscape.

Lands within 1/2 mile radius of the ACEC (500 acres) would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites. These 500 acres would be closed to

surface disturbing activities that could adversely affect them (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-9 and Table 2-5); to mineral material sales for sand, gravel or other types of construction or building materials; to the use of explosives and blasting; and to vibroseis activities within 300 feet of the petrographs site.

Off-road vehicle travel, including vehicles used for geophysical exploration and fire suppression activities, would be limited to designated roads and trails (Table 2-15).

Human activity, recreation use, etc., would be restricted from February 1 through July 31 to protect nesting raptors. Exception from this restriction may be approved if conditions described in Appendix 7-1 apply.

### Wild and Scenic Rivers Management

**MANAGEMENT OBJECTIVE:** The objective for management of wild and scenic rivers would be to protect wild and scenic river values until Congress makes a determination for inclusion into the National Wild and Scenic Rivers System.

TABLE 2-20

### POTENTIALLY SUITABLE WILD & SCENIC RIVER SEGMENTS IN THE GREEN RIVER RESOURCE AREA

River	Segment Number	Segment Length	Location/Description	Class Recommendation
Sweetwater	1	0.6 miles	T. 30 N., R. 102 W., Section 19, from Bridger Forest border south to Beginning Sweetwater Canyon, Section 19.  Heavy riparian; one road leading to Guard Station Campground and network of roads in the campground.  Recreational usage.	Recreation
Sweetwater	2	3.0 miles	T. 30 N., R. 102 W., Section 19 from beginning Sweetwater Canyon south to Sweetwater Campground.  No access to Canyon other than foot; three 2-tracks to rim of Canyon from west; road access to Sweetwater Campground at southern end of segment.	Wild

## ALTERNATIVES

### TABLE 2-20 (Continued)

#### POTENTIALLY SUITABLE WILD & SCENIC RIVER SEGMENTS IN THE GREEN RIVER RESOURCE AREA

River	Segment Number	Segment Length	Location/Description	Class Recommendation
Sweetwater	3	2.8 miles	T. 29 N., R. 102 W., Section from Sweetwater Campground southeast to border state lands, Section 16.  Heavy riparian; road access into segment and road parallels .1 mile of river.	Scenic
Sweetwater	4	0.6 miles	T. 29 N., R. 102 W., Section 27 from border private land southeast to border state lands.  Heavy riparian; nearest access 2-track 1/4 mile south of segment end; no roads in corridor.	Wild
Sweetwater	5	0.5 miles	T. 29 N., R. 102 W., Section 34, from border state land south to border private land.  Heavy riparian; 2-track parallels west bank; one 2-track access from east; two 2-track access from west.	Scenic
Sweetwater	6	1.0 miles	T. 28 N., R. 102 W., Section 4, from border private land south to border private land.  Heavy riparian no roads in corridor; nearest access is 2-track 1/4 mile above north end of segment.	Wild
Sweetwater	7	1.2 miles	T. 28 N., R. 102 W., Section 10, from border private land southeast to border private land Section 11.  Heavy riparian; no roads in corridor; nearest access is parallel road 3/4 mile east of river.	Wild

**MANAGEMENT ACTIONS:** Segments of one river have been determined suitable for further consideration for inclusion in the Wild and Scenic River System. Approximately and 9.7 miles of the Sweetwater River would be considered. These stretches contain a combination of wild, scenic, and recreation classifications (see Table 2-20).

The portion of the Green River administered by BLM did not meet the suitability criteria based upon the inability of the BLM to manage the area because of lack of jurisdiction. However, it would be recommended that a cooperative study between BLM, BOR, and USFWS be conducted to determine eligibility and suitability.

BLM would cooperate on the formation and management of a greenbelt area.

#### Interim Management, Wild River Segments

Interim management of wild river segments would protect the wild values of the segments. Resource management objectives would protect the primitive and pristine values. Only those activities that conform with the objectives would be allowed. Intrusions would not be allowed.

Temporary cultural and paleontology activities (e.g., recordation, sampling, testing, stabilization, rehabilita-

## ALTERNATIVES

tion, and reconstruction) may be permitted to the extent that no permanent impacts occur to river-related values.

Fires would be suppressed by "light-on-the-land" techniques. No mechanized equipment would be used to suppress fires. Chainsaws and helicopter bucket drops may be allowed if no permanent impacts occur to river values.

No timber cutting, including firewood and post/pole cutting, would be permitted within the ¼ mile corridor.

No increase in active grazing preference and no new range improvements would be permitted.

Lands disposals would not occur. Exchanges could be allowed for acquiring private and/or state lands within the ¼ mile corridor or between river segments; however, no BLM-administered lands within the corridor may be exchanged.

The ¼ mile corridor would be an exclusion area for surface disturbing rights-of-way.

No mineral exploration, leasing, or development would be allowed within ¼ mile of centerline of the river. Existing leases would be allowed to expire.

No new locatable mineral mining claims would be allowed within ¼ mile of centerline. A withdrawal from exploration and development of locatable minerals would be pursued. Valid existing rights (existing mining claims) would be recognized. No recreational dredging for minerals such as gold would be allowed.

Geophysical exploration would be limited to foot access and placement of surface cables. No vehicles would be allowed. Surface charges may be allowed if a site specific analysis determines no adverse impacts would occur to river values.

No surface disturbing activities would be allowed within ¼ mile of the centerline.

Recreational development such as new campgrounds, put-in or take-out areas, or other such facilities would not be allowed. Motorized vehicles would not be allowed within the ¼ mile corridor. Hiking trails may be built if there would be a demand for them. Hikers would be required to "pack it out"; there would be no garbage facilities. Campfires would be permitted in keeping with existing fire management regulations. Hunting and fishing would be permitted.

Vegetation treatment or manipulation may not occur other than hand or aerial seeding of native species to restore natural vegetation.

The ¼ mile corridor would be managed to protect visual values.

The segment would be visited once a year when hiking access would be possible.

Water impoundments or diversions would not be permitted.

Wildlife habitat improvements would not be allowed within the ¼ mile corridor.

### Interim Management, Scenic River Segments

Interim management for scenic segments would protect scenic values. Some intrusions may be allowed if they were not readily evident and would not adversely affect scenic values.

Cultural and paleontology temporary activities (e.g., recordation, sampling, testing, stabilization, rehabilitation, and reconstruction) may be permitted to the extent that no permanent impacts occur to river-related values.

Fires would be suppressed by "light-on-the-land" techniques. Mechanized equipment would not be used to suppress fires. Chainsaws and helicopter bucket drops may be allowed if no permanent impacts occur to river values.

Timber cutting, including firewood and post/pole cutting, would not be permitted within the ¼ mile corridor.

There would be no increase in active grazing preference. Improvements would only be allowed if they were compatible with scenic river values.

Lands disposals would not occur. Exchanges could be allowed for acquiring private and/or state lands within the ¼ mile corridor or between river segments; however, no BLM-administered lands within the corridor may be exchanged.

Minerals exploration, leasing, or development would not be allowed within ¼ mile of centerline of the river. Existing leases should be allowed to expire.

A plan of development would be required for all locatable mineral activity. Recreational dredging for



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minerals such as gold would not be allowed. Valid existing rights (existing mining claims) would be recognized.

Geophysical exploration would be allowed if a site specific analysis determines no adverse effects would occur to scenic river values. Vehicles would use existing approved roads and trails only. Foot access would be required off of existing roads. Use of surface charges could be allowed if the site specific analysis determines that no adverse impacts would occur to the river values.

Surface disturbing activities could be allowed within ¼ mile of the centerline. All surface disturbances must be compatible with river values. An approved plan would be required prior to any disturbance.

Only those recreation developments that would conform with scenic river values would be allowed. Put in or take out areas could be allowed. Motorized vehicles would be restricted to using existing roads and trails only within the ¼ mile corridor. Hiking trails may be built if there would be a demand for them. Mountain biking would be allowed to the extent that activities do not damage river related values. Hikers would be required to "pack it out"; there would be no garbage facilities. Campfires would be permitted in keeping with existing fire management regulations. Hunting and fishing would be permitted.

Vegetation treatment or manipulation may not occur other than hand or aerial seeding of native species done to restore natural vegetation.

The ¼ mile corridor would be managed to protect visual values.

The segment would be visited once a year when hiking access would be possible.

Water impoundments or diversions would not be permitted.

Wildlife habitat improvements would only be allowed if they were compatible with scenic river values.

### **Interim Management, Recreational River Segments**

Interim management for recreational segments would protect recreational values. Some intrusions may be allowed if they would not adversely affect recreational values.

Cultural and Paleontology activities would be allowed if they would be compatible with recreation river values.

Fires would be suppressed using appropriate techniques if no permanent impacts would occur to recreation river values.

Commercial timber or post/pole cutting would not be allowed within the ¼ mile corridor. Firewood cutting for campfires within the corridor would be permitted.

There would be no increase in existing grazing AUMs. Improvements would only be allowed if they would be compatible with recreation river values.

Lands disposals would not occur. Exchanges could be allowed for acquiring private and/or state lands within the ¼ mile corridor or between river segments; however, no BLM-administered lands within the corridor may be exchanged.

Subject to existing regulations, new minerals leasing, exploration, and development would be allowed in the river corridor if recreational values were not adversely affected.

A plan of development would be required for all locatable mineral activity. Recreational dredging for minerals such as gold would not be allowed. Valid existing rights (existing mining claims) would be recognized.

Geophysical exploration would be allowed if site specific analysis determines no adverse effects would occur to recreation values. Vehicles would use existing roads and trails only. Foot access would be required off of existing roads. Use of surface charges would be allowed if site specific analysis determines no adverse effects would occur to recreation values.

Subject to existing regulations, surface disturbing activities would be allowed in the river corridor if site specific analysis determines no adverse effects would occur to recreation values.

New recreation developments or improvements to existing campgrounds could occur. Recreation use would be encouraged to the extent consistent with protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance recreation river values.

Vegetation treatment or manipulation may not occur other than hand or aerial seeding of native species to restore natural vegetation.

The ¼ mile corridor would be managed to protect visual values.

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The segment would be visited monthly when driving or snowmobile access would be possible.

Water impoundments or diversions would not be permitted.

Wildlife habitat improvements would be allowed if they would be compatible with recreation river values.

### ALTERNATIVE A - NO ACTION ALTERNATIVE (CONTINUATION OF EXISTING MANAGEMENT)

This alternative would continue present management practices based on existing land use plans.

#### Air Quality Management

**MANAGEMENT OBJECTIVE:** The objectives for management of air quality would be to maintain, and where possible, enhance present air quality levels; to protect public health and safety and sensitive resources; and within the scope of BLM authority, minimize emissions which may add to acid rain, cause violations of air quality standards, or reduce visibility.

**MANAGEMENT ACTIONS:** Special requirements would be applied on a case-by-case basis to alleviate air quality problems. BLM would continue to participate with other agencies in the collection of air quality data. Collected air quality data would be used to determine actual or potential impacts from air pollutant emissions and to provide information on proposed emission sources.

Special requirements (e.g., use authorization stipulations, mitigation measures, conditions of approval, etc.) to alleviate air quality impacts would be included on a case-by-case basis in use authorizations (including mineral leases). Examples of such requirements would include: limiting emissions, spacing of source densities, requiring the collection of meteorological data, covering conveyors at mine sites (to lower dust emissions), and placing restrictions on flaring of natural gas (to reduce sulfur emissions). See Appendix 7-2 for specific guidance for applying air quality protection measures.

Selection of locations for industrial plants and facilities would include consideration for avoiding significant reduction of air quality over the Flaming Gorge National Recreation Area, and for avoiding heavy fog conditions that would cause significant hazards (e.g., black icing of highways, extreme or continual fog that could inhibit transportation or recreation activities).

The BLM would continue to cooperate and coordinate with the Forest Service, Environmental Protection Agency and State of Wyoming in monitoring for atmospheric deposition (acid rain) and its impacts on the Class I airshed of the Bridger Wilderness.

BLM would cooperate with Wyoming DEQ on review of air quality regulations which could impact BLM-managed activities.

Surface disturbing activities would be managed to not violate air quality regulations (Appendix 5-2).

Minimal dust control on unimproved dirt roads and minimal restrictions on shipment of products (iron, coal, sand and gravel, etc.) from or across public lands would be continued.

See other resource management prescriptions in this document for other restrictions that may apply to air quality management activities.

#### Candidate Plant Species Management

**MANAGEMENT OBJECTIVES:** The objectives for management of plant species that are candidates for listing as threatened or endangered would be to prevent destruction or loss of the plant species communities and important habitat and to provide opportunities for enhancing or expanding the habitat.

**MANAGEMENT ACTIONS:** Known locations of candidate plant species communities (44 locations, about 3,110 acres) (Map 4) would be closed to: 1) surface disturbing activities that could adversely affect the candidate plant species and their habitat (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see Minerals Management); 2) mineral material sales; 3) off-road vehicular travel including those used for geophysical exploration activities; and 4) oil and gas leasing and surface mining activities and facilities associated with leasable minerals or related facilities.

Fire suppression activities would be limited to existing roads and trails, and geophysical activities would be required to avoid these candidate plant sites.

Known plant locations would be open to the location of mining claims and a withdrawal from mineral location would not be pursued. Existing plant locations and potential habitat would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the plant species.

## ALTERNATIVES

Any federally controlled management actions on potential habitat of candidate plant species communities on federal surface or private surface with federal minerals (about 39,320 acres) would require searches for the plant species prior to implementing projects and activities. These areas would be closed to activities that could adversely affect the plant species and habitat, where candidate plants and important habitat are located, and off-road vehicle travel would be limited to existing roads and trails.

Roughly 3,100 acres would be closed to oil and gas leasing.

See other resource management prescriptions in this document for other restrictions that may apply to candidate plant species management activities.

### Cultural, Natural History, and Paleontological Resource Management

**MANAGEMENT OBJECTIVES:** The objectives for management of the cultural and paleontological resources would be to: (1) expand the opportunities for scientific study, and educational and interpretive uses of cultural and paleontological resources; (2) protect and preserve the most important cultural and paleontological resources for future generations; and (3) resolve conflicts between cultural/paleontological resources and other resource uses. Of particular concern would be significant sites of historic or prehistoric human habitation, sites demonstrating unique ethnic affiliation, places having special spiritual or religious significance to Native Americans, and vertebrate fossil localities.

**MANAGEMENT ACTIONS:** Sites listed on the National Register of Historic Places (NRHP) and NRHP eligible sites would be managed for their local and national significance, under the guidelines of the National Historic Preservation Act (especially sections 106 and 110) (Appendix 6-1), the Archeological Resources Protection Act (ARPA), and the American Indians Religious Freedom Act (AIRFA) (Appendix 6-2) and to ensure unavoidable adverse effects would be properly mitigated prior to disturbance or destruction.

Appropriate level of analysis of all BLM undertakings would be conducted to determine National Register of Historic Places eligibility and potential effects to those historic properties in the area of potential effect in accordance with the National Historic Preservation Act (Appendix 6-1).

### Historic Trails

Management of the Oregon and Mormon Pioneer National Historic Trails and the Pony Express and California historic trails would provide cooperation with the National Park Service in implementation of the Comprehensive Historic Trails Management Plan for the Oregon and Mormon Pioneer National Historic Trails. Within ¼ mile or the visual horizon (whichever is less) of any contributing segment (233 miles, 74,560 acres) would be an avoidance area for surface disturbing activities (Map 5); however, development activities such as roads, pipelines, and powerlines could be considered to cross trails in areas where previous disturbance has occurred and the trail has lost its National Register characteristics and would no longer be considered a contributing segment to a trail.

Vehicles used for geophysical explorations, or similar activities, could cross and drive down the trails, provided a site specific analysis determines that no adverse effects would occur. Geophysical activities up to 300 feet from the trails could be considered provided a site specific analysis determines that visual intrusions and adverse effects would not occur; however, actual geophysical activity such as vibroseis, explosives, blasting, or drilling could not occur directly on the trails.

Management of historic roads and trails that are eligible for the NRHP but are not Congressionally designated historic trails such as the Overland Trail, the Cherokee Trail, and the Point of Rocks to South Pass Road (about 170 miles, 54,400 acres) would be recommended for listing to the National Register of Historic Places. Management prescriptions would generally be the same as those for designated trails.

Various Expansion Era (i.e., 1870-1940) trails (15 trails and approximately 800 miles) would be managed according to their historical context. Expansion Era trails are those routes developed after establishment of the Transcontinental Railroad in Wyoming in 1869. Management actions would include development of activity plans with the objective of preserving significant contributing segments (estimated at not more than 10 miles of each of the 15 trails, about 150 miles) in their natural condition and would apply the same management prescriptions applied to NRHP eligible historic trails.

The Big Sandy Station, Big Timber Station, Freighters Springs Station, Camp Carmichael, Lander's Camp, the site of the Simpsons' Gulch wagon train burning, the Eden-Farson site, and the Finley and Chicken Springs

## ALTERNATIVES

sites would be managed for the preservation of cultural and historical values. Cultural resource management plans would be developed to determine the site specific resource actions necessary.

Development actions in the Little Colorado Desert, North Nitchie Gulch, and Wamsutter Arch concentrated oil and gas areas would be managed by applying standard Section 106 (of the NHPA) compliance procedures (36 CFR 60 and Appendix 6-1).

Surface disturbing activities in playa lakes (Blue Forest, 24,640 acres; Blue Point, 3,200 acres; and Adobe Town Rim, 1,280 acres) would avoid adverse effects to NRRP eligible cultural sites.

### Rock Art Sites

Rock art sites would be managed to protect their intrinsic values. Five known rock art sites (Cedar Canyon, LaBarge Bluffs, Sugarloaf, Tolar, and White Mountain, 100 acres), would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

These areas would be closed to surface disturbing activities that could adversely affect rock art resources (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (see discussions in Lands and Realty Management and Minerals Management); to the location of mining claims for Sugarloaf and White Mountain Petroglyphs (40 acres) (withdrawals from mineral location would be retained).

Three rock art sites would be closed to off-road vehicular travel (LaBarge Bluffs, Sugarloaf, Tolar, 60 acres) including those used for geophysical exploration activities. Off-road vehicular travel would be limited to existing roads and trails on 2 sites (White Mountain and Cedar Canyon, 40 acres) (see the section on Off-Road Vehicle Management); and use of fire retardant chemicals containing dyes would not be allowed.

No specific prescriptions would apply to the area within 1/2 mile radius of the 5 rock art sites. All other rock art sites would be managed on a case-by-case basis according to resource values.

### Other Sites

LaCiede Stage Station, Dug Springs Stage Station, and the Pine Springs site (110 acres) would be protected and would be closed to surface disturbing activities that could adversely affect the sites and to mineral material

sales (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (see discussions in Lands and Realty Management and Minerals Management).

Dug Springs (10 acres) and LaCiede Stage Stations (10 acres) would be open to exploration and development of locatable minerals; the 90-acre withdrawal in Pine Springs would be retained. Cultural resource management plans would be written for each site.

Human burial sites would be managed according to provisions of Section 106 of NHPA data recovery could be an acceptable mitigation measure, except in the case of Native American burials when provisions of the Native American Graves Protection Repatriation Act would prevail. Native American burial sites would take into account recommendations from appropriate tribes. These areas (about 2 acres) would be closed to surface disturbing activities that could adversely affect them (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; mineral material sales; etc.) (see discussions in Lands and Realty Management and Minerals Management).

The Tri-Territory Marker (10 acres) would be open to exploration and development of locatable minerals and no withdrawal would be pursued; and for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area.

The Parting-of-the-Ways historic site would be protected by closing it to exploration and development of locatable minerals and a 40-acre withdrawal would be maintained. Development activities such as roads, pipelines, and powerlines would be allowed to cross the site in areas where previous disturbance has occurred, and where the trail and site has lost its National Register characteristics (see discussions in Lands and Realty Management and Minerals Management). The site would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area, and would be subject to the prescriptions for management of National Historic Trails.

The aboriginal quarry site (160 acres) would be protected by closing the site to mineral location and pursuing a withdrawal. The site would be closed to surface disturbing activities that could adversely affect the site (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; mineral material sales; etc.) (see discussions in Lands and Realty Management and Minerals Management).



## ALTERNATIVES

The integrity of the Dry Sandy Swales (1 mile, 20 acres) would be protected. The site would be closed to surface disturbing activities that could adversely affect the site and to mineral material sales (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see discussions in Lands and Realty Management and Minerals Management).

North and South Table Mountains (1,280 acres) would be managed to preserve cultural information within standard Section 106 and 110 compliance. The area would be closed to surface disturbing activities that could adversely affect the values (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see discussions in Lands and Realty Management and Minerals Management). The area would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area.

Consultation with appropriate Native American groups concerning areas of concern for spiritual and religious purposes would occur in accordance with the American Indian Religious Freedom Act.

Interpretive materials which describe the cultural resources of the area, their significance, and the bureau's responsibility toward these resources would be prepared. Historical aspects of all programs would be interpreted for public appreciation and enjoyment as appropriate.

Exchanges for acquisitions for approximately 40 acres and cooperative agreements would be pursued to enhance management of cultural resources.

Collecting of vertebrate fossils may be allowed with a permit that may be issued only to an academic, scientific, governmental, or other qualified institution, individual, or consultant. Collection of common invertebrate fossils and petrified wood for hobby purposes may be allowed on public lands and is regulated under 43 CFR 3600, 3622, and 8365.

Surface disturbance activities that affect fossil locations would be allowed provided a site specific analysis determines that unavoidable adverse effects on these resources could be mitigated and inventories would be required prior to disturbance. Surveys may be required on areas with potential for fossils, including outcrops of the Bridger and Washakie Formations, and the lower-most 100 feet of the Laney Member.

Geological and ecological features of Steamboat Mountain and Boar's Tusk-Killpecker Sand Dunes ar-

reas would be managed under multiple use management.

See other resource management prescriptions in this document for other restrictions that may apply to cultural, natural history, and paleontological resource management activities.

## Fire Management

**MANAGEMENT OBJECTIVE:** The objectives for fire management would be to use prescribed fire to meet resource objectives (such as improvement of wildlife habitat, range condition, and desired plant communities) and to suppress wildfires for the protection of resource values, property, and human life.

**MANAGEMENT ACTIONS:** Fire management activities would meet resource management objectives, protect sensitive resources and property, and promote public health and safety.

Fire suppression would be provided commensurate with resource values. Fire strategies would include confinement, containment, and control (see Glossary). Figure 2 shows the decision-making process used when dealing with fire.

Heavy equipment would not be used to suppress fire in the Pine Springs Expansion Area or in the aboriginal quarry site.

Fires around populated areas, Hickey Mountain, Pine Mountain, Little Mountain, Steamboat Mountain conifer communities, and the structures at Crookston Ranch would receive immediate suppression efforts.

Fire retardants and chemicals would not be utilized in rock art sites. Suppression activities would be designed to protect fisheries, candidate plant areas, and other special management areas.

The sensitive cultural and historic sites would be closed to fire suppression activities other than use of existing roads and trails.

Timber stands (conifer) would be managed under the guidelines of full suppression (contain, confine, control) for wildfires.

Prescribed fire by both planned and unplanned ignition would be used as a resource management tool. Activity plans would be prepared to address specific applications in accordance with resource objectives.

## ALTERNATIVES

Prescribed burning would be conducted so that ambient air quality standards would not be violated.

Aspen and woodland juniper would be available for consideration of a prescribed fire condition.

See other resource management prescriptions in this document for other restrictions that may apply to fire management activities.

### Forest Resource Management

**MANAGEMENT OBJECTIVES:** The objective for management of commercial forest lands would be to maintain or improve the health and vigor of the timber stands. Silvicultural practices, mainly harvesting, would be done to improve stand condition. Public demand sales or commercial sales would be used to achieve this objective.

**MANAGEMENT ACTIONS:** The planning area has been broken into 4 timber compartments for timber management: Wind River Front, Pine Mountain, Little Mountain, and Hickey Mountain-Table Mountain (Map 6). Hickey Mountain-Table Mountain would be managed under the woodland prescriptions described in this alternative. Noncommercial forest lands would be managed to optimize cover for wildlife and protect soil and watershed values. Based upon the commercial forest land base, allowable harvest, and management constraints, the Green River planning area could sustain a sawtimber harvest level (from about 7,943 acres) of 500,000 board feet to 1,000,000 board feet annually (Table 2-3). Commercial forest lands would be managed under a category of restricted timber management to improve the health and vigor of diversity of forest stands and still give full consideration to other resource values. Priority harvest would be given to mature, decadent, and diseased trees.

Commercial and noncommercial forest lands would be managed to meet the local demand for minor forest products (e.g., fuelwood, posts and poles, windlings, and Christmas trees). This use would be permitted to the extent that it would meet resource objectives.

The major consideration in the harvesting program would be to improve the condition of the forest stand. Soil, watershed, and wildlife cover would be important considerations. Stand conditions and management considerations would dictate harvest methods and size and shape of units.

Cutting methods could include clearcutting, individual tree marking, shelter wood, thinning, and group selec-

tion. Clearcut units would generally not exceed 25 acres in size unless specific stand conditions or emergency situations dictates otherwise. Clearcut unit size and shape would be designed to maximize natural regeneration and to provide maximum edge effect for wildlife.

Timber stands (1,435 acres) within big game winter ranges would be closed to logging activity from November 15 to April 30. If the logging unit would be within big game partition habitats (2,662 acres), the area would be closed to timber harvest activities from May 1 through June 30.

From February 1 to July 31, there would be no logging activity within 2 miles of sage grouse nesting sites (see Table 2-10) or within ½ mile of raptor nests (22 acres). Exceptions may be approved if conditions described in Appendix 7-1 apply.

Harvesting activities would not occur within 100 feet of drainages. Unless an approved plan were developed, no surface disturbance would be allowed on 249 acres within 500 feet of or in 100-year floodplains, wetlands, or perennial streams. No surface disturbance would be allowed within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages, without an approved plan to mitigate impacts to water quality. Linear crossings would be considered on a case-by-case basis.

Stand replacement of harvested areas or areas denuded by natural causes would be revegetated with tree seedlings within prescribed time periods of 5 to 15 years (fully stocked).

Woodland forest would be managed under a category to enhance or maintain other resource values. Woodland forests consist of juniper, aspen, and limber pine (127,977 acres). Conifer species may be a minor component of this woodland forest. Under this category, these stands would be managed for other resource values, mainly watershed, recreation, and wildlife considerations.

Woodland forest would receive silvicultural treatment which would promote the viability of these stands. These treatments may include thinning, harvesting, chaining, and burning. The vegetative material resulting from these treatments would normally be sold as public demand sales.

Woodland forest acreage would be maintained and no treatment practice would be implemented that converts the areas to another vegetation type. Old aspen stands may be replaced by stands of sprouting aspen by

## ALTERNATIVES

various treatment (e.g., burning, etc.), or old decadent trees may be left standing or downed to provide cover for wildlife. Silvicultural treatments would be developed in mature timber stands to improve wildlife habitat and watershed condition, i.e., create small openings to provide forage for wildlife and accumulate snow drifts to increase moisture. Tree seedlings would be re-established within these openings.

All commercial conifer areas would be managed under full fire suppression. Exceptions could be made for prescribed burns of slash piles after logging and burning aspen stands to improve wildlife habitat. Firewood cutting within and adjacent to campgrounds would be allowed.

Cottonwood trees would not be available for harvesting.

See other resource management prescriptions in this document for other restrictions that may apply to forest resource management activities.

### Hazardous Materials and Other Hazards

**MANAGEMENT OBJECTIVES:** The objectives for management of hazardous materials and waste would be to: 1) protect public and environmental health and safety on BLM-administered public lands, 2) comply with applicable federal and state laws, 3) prevent waste contamination due to any BLM-authorized actions, 4) minimize federal exposure to the liabilities associated with waste management on public lands, and 5) integrate hazardous materials and waste management policies and controls into all BLM programs.

**MANAGEMENT ACTIONS:** For BLM-authorized activities that involve hazardous materials or their use, precautionary measures would be used to guard against releases or spills into the environment.

Sale or transfer of public lands on which storage or disposal of hazardous substances has been known to occur would require public notification of the type and quantity of such substances.

BLM-administered public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations and contingency plans. Parties responsible for contamination would be liable for cleanup and resource damage costs, as prescribed in federal and state regulations. If at all possible, the responsible parties

would bear the financial burden of cleanup and resource damage costs.

Any produced water pit or drilling fluid pit that shows indications of containing hazardous wastes would be tested for the TCLP constituents and if analysis proves positive, the fluids would be disposed of properly. The costs of testing and disposal would be the responsibility of the operator.

If hazards should be identified, the BLM will provide appropriate warnings and establish precautions for safety hazards associated with the use of any areas on any areas on BLM-administered public lands.

See other resource management prescriptions in this document for other restrictions that may apply to hazardous materials management activities.

### Lands and Realty Management

**MANAGEMENT OBJECTIVES:** The objectives for management of the land and realty program would be to manage the public lands to support the goals and objectives of other resource programs, to respond to public demand for land use authorizations, and to acquire administrative and public access where necessary.

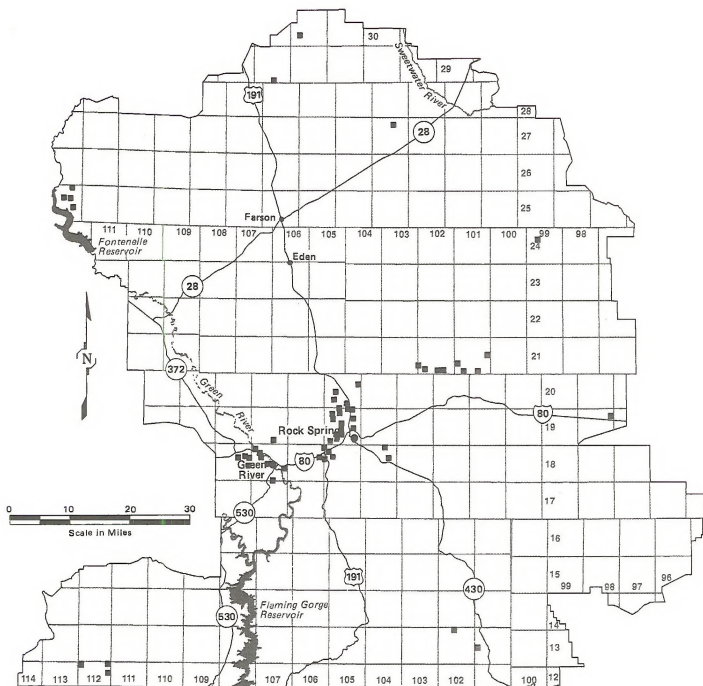
**MANAGEMENT ACTIONS:** The lands and realty management actions are divided into five groups.

#### Land Ownership Adjustment

Public lands would be retained in federal ownership with the exception of those lands described below. All disposals must conform to the criteria listed in Appendix 8-2. Public lands which have future potential for disposal because they are isolated and would be difficult to manage have been identified in Appendix 8-1 (9,123 acres). The disposal of these lands may allow for the acquisition of important resource lands or meet other important public objectives such as community expansion and economic development. Priority would be given to land exchanges. All lands identified for possible disposal would be added to the BLM/State Master Exchange File (Map 27). To prevent string development, tracts of land along Interstate Highway 80 interchanges would not be considered for disposal.

Sweetwater County School District No. 1 would be given the opportunity to acquire Lots 3, 4, 5, section 28, T. 19 N., R. 105 W. (124 acres) for school purposes prior to any other type of disposal.





■ ■ ■ Disposal Area

Map 27  
Alternative A  
Land Tenure  
Adjustment Parcels  
Green River Planning Area

## ALTERNATIVES

Action would be taken to acquire lands (about 30,770 acres) by purchase or exchange to support resource needs (see Appendix 8-3). Lands would include private/state lands along the upper stream reaches of the Big Sandy River; State inholdings in WSAs; cultural/historic sites; candidate, threatened and endangered species habitat; riparian habitat and other lands with important resource value.

### Utility/Transportation Systems

Public lands would be made available throughout the planning area for rights-of-way, permits, and leases.

The entire planning area, with the exception of defined avoidance and exclusion areas, would be open to the consideration of granting of rights-of-way (reference ACEC and other special management area alternatives).

Each stream crossing would require public notification as required by BLM Manual 7221.

The Aspen Mountain Communications Site Plan would govern development of sites at this location. Sites at other locations would be approved on a case-by-case basis. Sites would be shared where possible.

Major transportation and utility line rights-of-way would be confined to established concentration areas. Areas designated as utility windows, concentration areas, and existing communication sites would be preferred locations for future grants (Map 28).

Concentration areas would not be designated due to the predominate checkerboard private land pattern in the planning unit.

Windows ½ mile in width have been identified for the placement of utilities. The northern east-west window would be for underground facilities only.

Rights-of-way and avoidance areas are described in Table 2-4, Table 2-5, Map 29, and Map 30.

An avoidance area for major utility lines would be located along I-80 between Point of Rocks and Green River. Due to topography, congestion in the concentration area, and surface mining, this area would be restricted to local distribution service lines.

### Withdrawals/Classifications

Withdrawals would be processed to afford protection to important resource values. Withdrawals which no longer serve the purpose for which the lands were

withdrawn would be revoked. Action to revoke withdrawals would not take place during the tenure of this plan (Map 11 and Table 2-7).

The Multiple Use Management Classification as it affects public lands in the planning area (200 acres) would be revoked.

Public Water Reserves would be terminated where no longer needed, and acquired where the need exists (21,368 acres canceled and 9,386 acquired acres).

An additional 63 acres inundated by water under the Flaming Gorge Reservoir would be withdrawn for the Bureau of Reclamation.

### Desert Land Entries

All public land in the planning area would be considered unsuitable for and closed to desert land entry and agricultural leases. In the event that an applicant can provide evidence of a water right and provide an acceptable conservation plan which protects the soil resource and prevents salinity contribution to groundwater, his application for either a DLE or for an agricultural lease would be considered on its merits. Desert Land Entries and agricultural leases must meet the criteria outlined in Appendix 8-2.

### Access

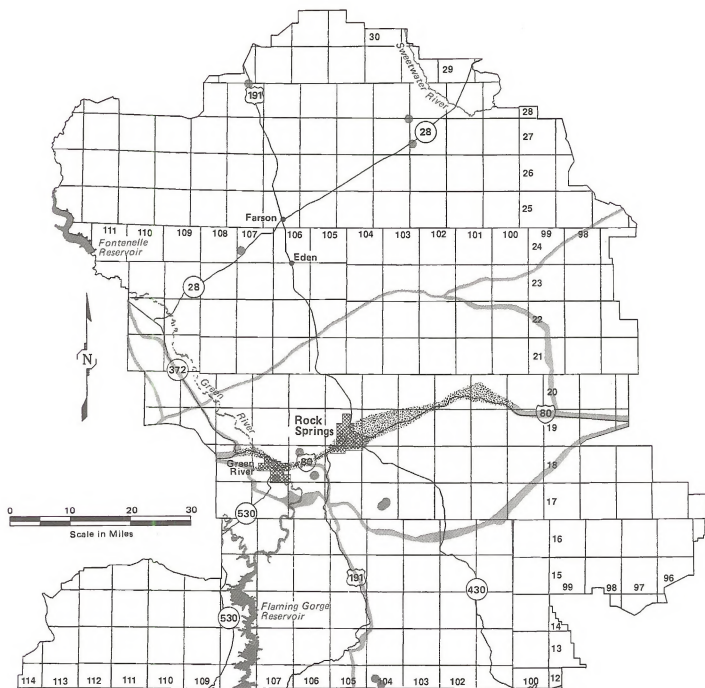
Access to public lands would be provided throughout the planning area. Access would be closed to areas to protect significant resource values. Easements would be acquired to provide access to public lands for recreational, wildlife, range, cultural/historical, mineral, ACEC, special management area, and other resource needs (see Table 2-8 and Map 13).

Placement of advertising signs on public lands adjacent to county roads, or roads included in the BLM Transportation Plan, would not be required to meet the criteria for sign placement on federal or state highways.

See other resource management prescriptions in this document for other restrictions that may apply to lands and realty management activities.

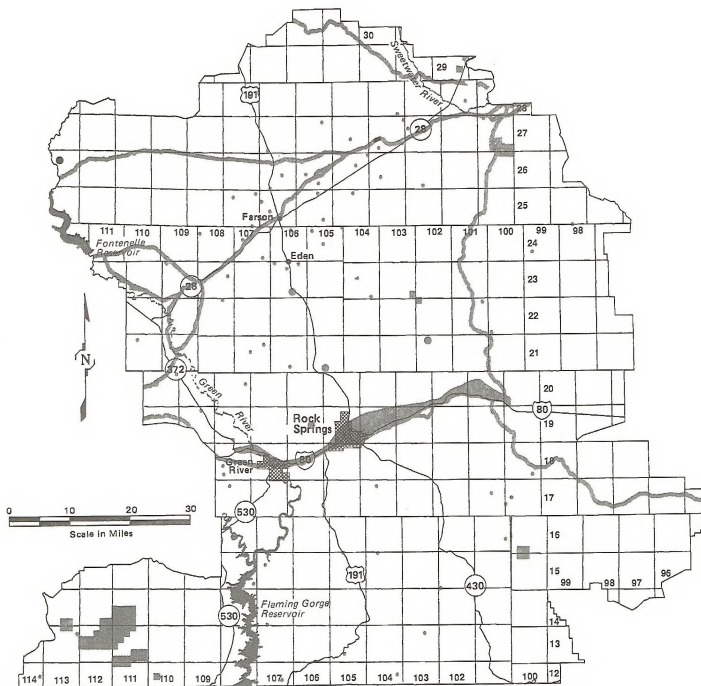
### Livestock Grazing Management

**MANAGEMENT OBJECTIVE:** The objective for livestock grazing management would be to improve forage production and ecological conditions for the benefit of livestock use, wildlife habitat, watershed, and riparian areas.



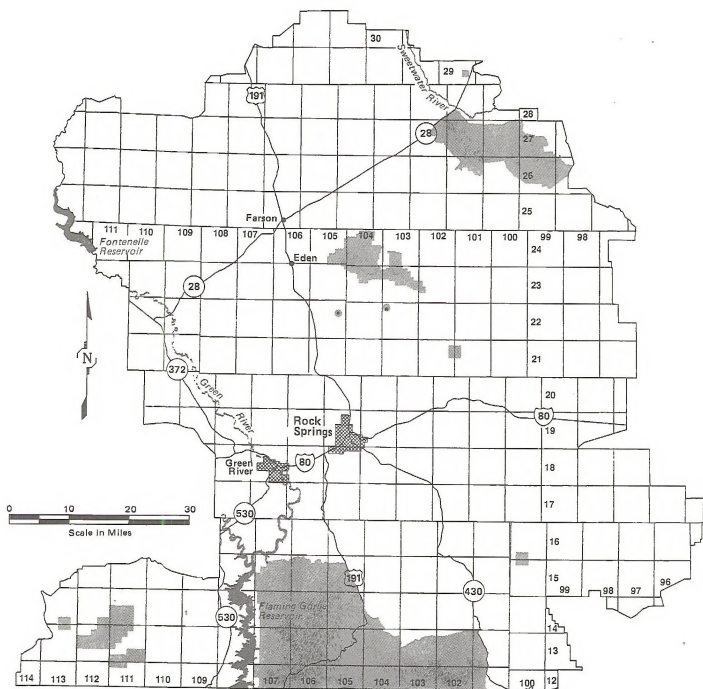
-  Existing Corridor
-  Communication Site
-  Avoidance Area

**Map 28**  
**Alternative A**  
**Major Utility Lines,**  
**Concentration Areas,**  
**and Communication Sites**  
**Green River Planning Area**



Exclusion Area  
 Avoidance Area

Map 29  
 Alternative A  
**Rights-of-Way Exclusion  
 and Avoidance Areas**  
 Green River Planning Area



- Avoidance Area
- Exclusion Area

**Map 30**  
**Alternative A**  
**ROW Avoidance or Exclusion Areas in**  
**Special Management Areas**  
**Green River Planning Area**

## ALTERNATIVES

**MANAGEMENT ACTIONS:** The current active grazing preference (318,647 AUMs) would be maintained or improved through implementation of AMPs, construction of range improvement projects, and vegetation manipulation.

Livestock grazing would not be authorized in the 970-acre Palmer Draw area and special management exclosures. AUMs currently authorized in this area would be suspended. All developed and semi-developed recreation areas would be closed to livestock grazing. Authorized grazing preference may be reduced in areas with excessive soil erosion and poor range condition if allotment evaluation warrants such a change or if necessary to provide forage for wildlife, wild horse, and recreational use.

The present allotment boundaries and management prescriptions would continue in the Rock Springs Allotment.

AMP development and grazing system/range improvement implementation for "I" and "M" categories would be the same as described for the Preferred Alternative.

The current authorized active livestock use and existing forage reservations for wildlife and wild horses would be maintained. Existing rangeland monitoring would continue and additional rangeland monitoring would be initiated to determine the need for forage allocation adjustment.

Unallotted forage on public land (15,100 acres) scattered throughout the planning area would be allocated on a case-by-case basis after consideration would be given to all resource management objectives. The number of AUMs to be allocated would be determined after the lands have been evaluated. Forage increases would be evaluated in site specific analysis and considered for allocation on a case-by-case basis.

Seventy-five percent of riparian areas would achieve a proper functioning condition, or better in ten years.

Management to meet wild horse, wildlife, watershed, and soils objectives would be continued.

Salt blocks for livestock would not be placed within 500 feet of live water, wetlands, or riparian areas, unless analysis shows that it would be acceptable.

Vegetation treatment (mechanical, chemical, fire) would be designed to increase livestock forage by removing decadent stands of brush in specific areas

(approximately 26,700 acres). Prescribed fire would be the preferred method of vegetation manipulation. Chemical treatment would be used only where national guidelines can be exercised to prevent unwanted destruction of desirable fauna or flora and to prevent transportation of these chemicals to other areas by water or air movement (Appendix 9-5). Noxious weed control would be the same as described in the Preferred Alternative.

Water sources would be developed in crucial wildlife winter ranges only when consistent with wildlife habitat needs. Such sources would be designed to benefit livestock and wildlife. Alternative water supplies or facilities for livestock may be provided to relieve grazing pressure along stream bottoms and to improve livestock distribution.

Fence construction in big game use areas and known migration routes would require site specific analysis. All constructed fences would follow construction standards and design (BLM Manual 1740) and would be located and designed to not impede wild horse movement. Construction of approximately 27 miles of fence to meet management objectives would be considered. Fences on public land causing documented wildlife conflicts would be modified, reconstructed, or removed.

Combining and splitting allotments would be considered when such an action would help meet plan objectives. The Henrys Fork allotment would be split into 3 allotments and managed by the guidelines of revised AMPs. The Cottonwood Creek and Antelope Wash allotments would be consolidated into one two-pasture allotment and managed by the guidelines of a new AMP.

Requests for conversions of livestock kind and authorized season of use would be considered on a case-by-case basis following environmental analysis when consistent with wildlife, wild horse, watershed, and riparian objectives.

Stock driveway withdrawals numbers 4, 21, and 23 would be retained.

See other resource management prescriptions in this document for other restrictions that may apply to livestock grazing management activities.

## Minerals Management

**MANAGEMENT OBJECTIVE:** The objective for management of the minerals program would be to maintain or enhance opportunities for mineral exploration and development.



## ALTERNATIVES

### Leasable Minerals

#### Fluids

MANAGEMENT OBJECTIVE: The objective for management of oil and gas resources would be to provide for leasing, exploration, and development of oil and gas, while protecting other values.

MANAGEMENT ACTIONS: Table 2-21 lists lands in the planning area with oil and gas lease restrictions necessary to protect other resource values. All WSAs, the Rock Springs expansion area, incorporated cities and towns, 14-Mile recreation area, and the Superior recharge area would remain closed to leasing. During this planning process, locations of candidate plant species were also placed in the no leasing category. Approximately 255,550 acres of BLM-administered mineral estate would not be available for oil and gas leasing.

**TABLE 2-21**  
**AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL**  
**(acres)**  
**ALTERNATIVE A**

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
No Leasing					
14-Mile Recreation Area	20	20	0	0	20
Candidate Plant Localities¹	3,110	2,600	100	430	3,130
Incorporated Cities and Towns (Rock Springs, Green River, and Superior	3,770	2,700	0	3,090	5,790
Rock Springs Expansion Area (old area)	15,740	16,050	1,130	0	17,180
Seedskaadee National Wildlife Refuge²	13,360	9,960	4,090	0	14,050
Superior Recharge	3,660	4,020	0	0	4,020
WSAs	225,110	134,540	14,310	76,560	225,410
Total No Leasing	264,770	169,890	19,630	80,080	269,600
No Surface Occupancy (NSO)³					
14-Mile Recreation Area	20	20	0	0	20
Aboriginal Quarry	160	0	0	160	160
Big Sandy River and 500' buffer for new permanent facilities	100	0	0	100	100
Boar's Tusk	90	90	0	0	90
Candidate Plant Species Habitat¹	3,110	2,700	0	430	3,130



# ALTERNATIVES

TABLE 2-21 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres) ALTERNATIVE A

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			Total
		High	Moderate	Low	
Candidate Plant Species Potential Habitat <sup>4</sup>	36,550	4,520	16,790	19,010	40,320
Cedar Canyon Petroglyphs NRHP Site	20	20	0	0	20
Concentrated population areas +1 mile radius (Rock Springs & Green River)	12,130	8,320	1,640	4,900	14,860
Crookston Ranch + ½ mile buffer	500	580	0	0	580
Currant Creek Drainage	23,740	0	2,820	21,200	24,020
Dry Sandy Swales	20	0	0	20	20
Emmons Cone	60	60	0	0	60
Greater Sand Dunes ACEC outside WSA <sup>5</sup>	14,150	14,380	70	0	14,450
LaBarge, Sugarloaf, and Tolar Petroglyphs	60	40	0	20	60
LaCiede & Dug Springs Stage Stations	20	20	0	0	20
Native American Burials	2	2	0	0	2
Natural Corrals ACEC	1,115	1,270	0	0	1,270
North and South Table Mountains	1,280	1,280	0	0	1,280
Oregon Buttes ACEC	3,450	0	0	3,450	3,450
Pilot Butte	120	0	0	120	120
Pine Butte	320	320	0	0	320
Pine Springs ACEC	90	0	0	90	90
Raptor nesting (cliffs, bluffs, roosts, outcrops, and pinnacles)	890	640	130	130	900
Sage Grouse LekS (¼ mile buffer)	8,170	1,420	4,410	2,660	8,490
Superior Recharge Area	3,660	4,020	0	0	4,020

# ALTERNATIVES

TABLE 2-21 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres) ALTERNATIVE A

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
Sweetwater River and 500' buffer for new permanent facilities	550	0	0	550	550
White Mountain Petroglyphs ACEC	20	0	20	0	20
Wild Horse Herd Viewing Area	2	0	2	0	2
<b>Total No Surface Occupancy<sup>6</sup></b>	<b>168,410</b>	<b>61,570</b>	<b>39,760</b>	<b>79,140</b>	<b>180,470</b>
<b>Seasonal Restrictions<sup>3</sup></b>					
Crucial Antelope Winter Range	817,640	268,740	335,370	241,780	845,890
Crucial Deer Winter Range	676,830	330,630	74,590	300,690	705,910
Crucial Elk Winter Range	345,590	182,870	40,280	128,000	351,150
Crucial Moose Winter Range	33,270	8,770	6,500	23,080	38,350
Elk Calving Areas	85,830	55,610	6,130	26,330	88,070
Game Fish Spawning Areas (miles)	210	30	80	140	250
High Value Lambing Area	760,080	298,940	300,010	216,350	815,300
Raptor Habitat (1/4 mile buffer)	260,020	207,160	42,040	46,830	296,030
Sage Grouse Nesting Areas (within 1 1/4 miles)	447,170	110,770	218,770	131,840	461,380
<b>Total Seasonal Restrictions<sup>8</sup></b>	<b>2,393,030</b>	<b>1,086,070</b>	<b>667,140</b>	<b>714,790</b>	<b>2,468,000</b>
<b>Surface Disturbance Restrictions<sup>3</sup></b>					
Big Sandy River (within 500 feet)	100	0	0	100	100
Cedar Canyon ACEC slopes >12%	1,780	1,780	0	0	1,780
Continental Divide Snowmobile Trail (1/4 mile buffer)	2,330	0	0	2,330	2,330
Currant Creek Drainage	23,740	0	2,820	21,200	24,020
Game Fish Spawning Areas (miles)	210	30	80	140	250
Greater Sand Dunes ACEC & 1 mile buffer <sup>7</sup>	70,850	58,600	13,190	0	71,790

# ALTERNATIVES

TABLE 2-21 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres) ALTERNATIVE A

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
Historic Trails (1/4 mile buffer) <sup>6</sup>	100,210	43,720	26,700	29,420	99,840
Pine Springs Expansion	6,030	0	0	6,030	6,030
Recreation Sites	80	30	10	40	80
Riparian Areas	8,730	2,780	1,710	4,940	9,430
Sage Creek Watershed	52,670	6,660	32,450	13,850	52,960
Slopes greater than 25%	198,720	89,210	31,410	68,320	188,940
South Pass Historic Landmark	5,260	0	0	5,420	5,420
South Pass Historic Landscape <sup>7</sup>	87,580	0	0	90,670	90,670
Sweetwater River (within 500 feet)	550	0	0	550	550
View from Fontenelle Reservoir	120	220	0	0	220
VRM Class II Lands	423,350	165,850	26,340	245,540	437,730
Within 100' of inner gorge of intermittent ephemeral streams	7,170	4,130	920	2,500	7,550
Within 500' of water, 100 year floodplains, and wetlands <sup>8</sup>	95,550	47,050	22,140	37,860	107,050
<b>Total Surface Disturbance Restrictions<sup>8</sup></b>	<b>1,097,640</b>	<b>472,950</b>	<b>132,410</b>	<b>472,880</b>	<b>1,078,240</b>

<sup>1</sup> As new populations are identified, their locations would be added to this total.

<sup>2</sup> This RMP will not make decisions for the management of federal minerals on this area.

<sup>3</sup> Refer to Appendix 2, "Wyoming BLM Standard Mitigation Guidelines."

<sup>4</sup> Searches would be required prior to surface disturbance activities.

<sup>5</sup> The number of producing or temporarily shut-in wells would not exceed 3 per section. In the undeveloped area, construction, development, and surface occupancy would be limited to stabilized dunes only.

<sup>6</sup> Areas of restriction may overlap. If they overlap, the area of overlap is only counted once.

<sup>7</sup> Construction within one mile or the visual horizon, would consider alternatives like relocating visual screening, or any other methods available to reduce objectionable visible profile from the ACEC.

<sup>8</sup> All activity would conform with requirements of Class II visual values.

<sup>9</sup> Acreage figures for floodplains are based on Housing and Urban Development maps and are not complete for entire resource area.

## ALTERNATIVES

The remainder of the planning area would be open to oil and gas leasing with restrictions that would apply to certain areas. Types of resource values that would be protected by a no surface occupancy limitation are: cultural, historic and recreation sites, certain ACECs, some topographic features, high value watershed areas, the wild horse viewing area, candidate plant species locations and habitat, wildlife, the Superior recharge area, and within one mile of certain concentrated population areas. About 180,470 acres would be available for lease with a no surface occupancy restriction.

Seasonal restrictions would be placed on certain big game winter ranges, calving or parturition areas, sage grouse nesting areas, raptor habitat, game fish spawning areas, and lambing areas. About 2,467,350 acres would be available for lease with seasonal restrictions.

Mineral exploration and development activities would be restricted, where appropriate, to protect the following types of resource values: all cultural sites and historic trails, historic sites, certain visual resources, soils and watershed, all slopes greater than 25 percent, recreation sites, certain ACECs, and on slopes greater than 12 percent in the Cedar Canyon ACEC. During the planning process additional restrictions were placed on oil and gas exploration and development activities in the Greater Sand Dunes ACEC, on candidate plant species habitat, on development in certain watersheds, and in the South Pass Historic Landscape.

Surface disturbance restrictions would be placed on approximately 1,097,000 acres.

Maps 31, 32, 33, and 34 shows those portions of the planning area where no leasing would be allowed and

areas where occupancy and disturbance would be restricted.

### Solid Leasables (Coal)

The Federal Coal management options for this (the no action) alternative were derived through the coal screening process completed in 1981 for the Big Sandy and Salt Wells 1981 resource areas. See Appendix 3-1 for an explanation of how the coal screening was conducted.

**MANAGEMENT OBJECTIVES:** The objectives for management of the federal coal resources in the planning area would be to provide for both short and long-range development of federal coal, in an orderly and timely manner, consistent with the policies of the federal coal management program, environmental integrity, national energy needs, and related demands.

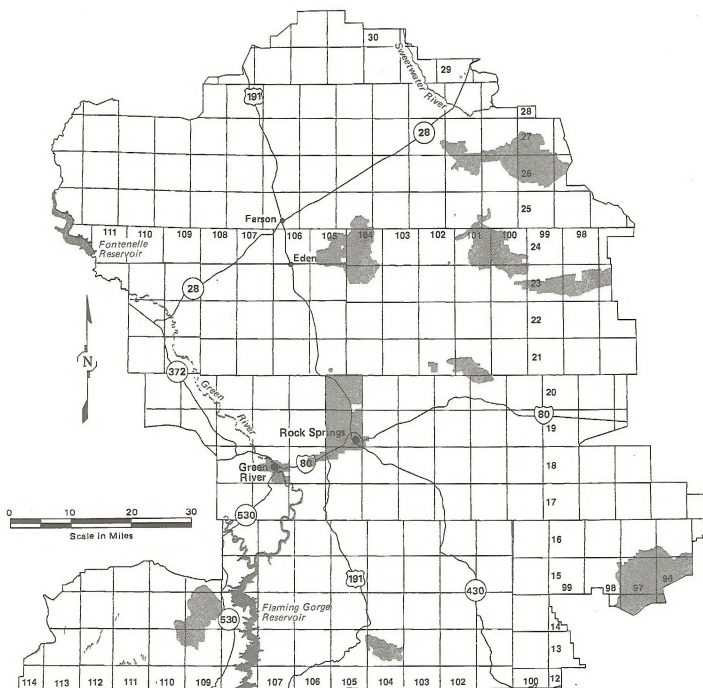
**MANAGEMENT ACTIONS:** With appropriate limitations and mitigation requirements for the protection of other resource values, all BLM-administered public lands and Federal coal lands in the Green River planning area, except for those identified in Table 2-11, would be open to coal resource inventory and exploration to help identify coal resources and their development potential.

About 76,608 acres of federal coal lands within the Coal Occurrence and Development Potential area (see Map 18) would be open to further consideration for coal leasing and development (i.e., new competitive leasing, emergency leasing, lease modifications, and exchange proposals, under the Federal Coal Management Program) with appropriate and necessary conditions and requirements for protection of other land and resource values and uses (Table 2-22).

TABLE 2-22

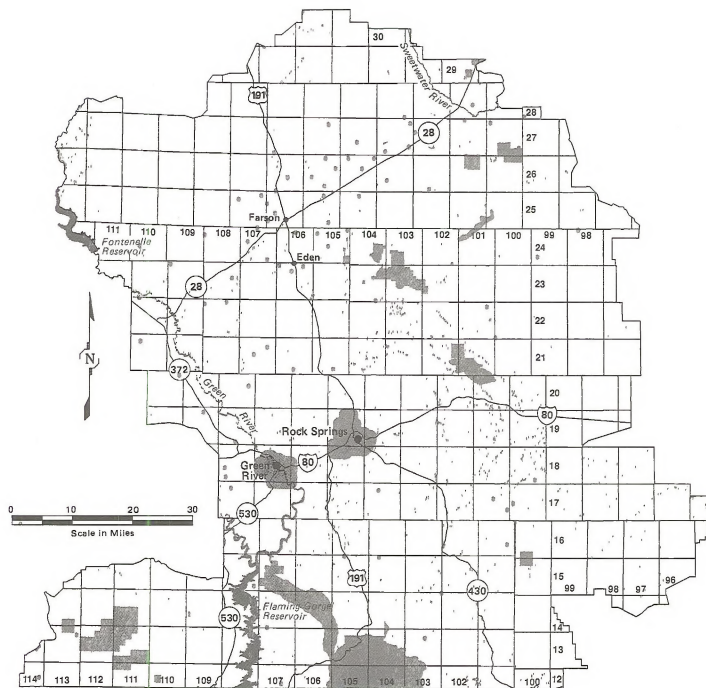
### SUMMARY DESCRIPTION OF COAL SCREENING PROCESS RESULTS AND COAL MANAGEMENT ACTIONS (Alternative A)

Coal Screening Process	Federal Coal Lands		
	Surface	Subsurface	PRLAs
Total Coal Potential Area Evaluated	70,300	98,200	8,300
Leased Federal Coal Lands (not evaluated)	(30,200)	(30,200)	
Federal Coal Lands Unsuitable for (Closed To) Leasing Consideration	14,400	5,900	8,300
Federal Coal Lands Unacceptable for (Closed To) Leasing Consideration	3,200	5,800	
<b>Coal Management Actions</b>			
Remaining Federal Coal Lands Acceptable for Further Leasing Consideration	52,700	86,500	
Portion Acceptable Pending Studies, etc.	1,900	7,000	



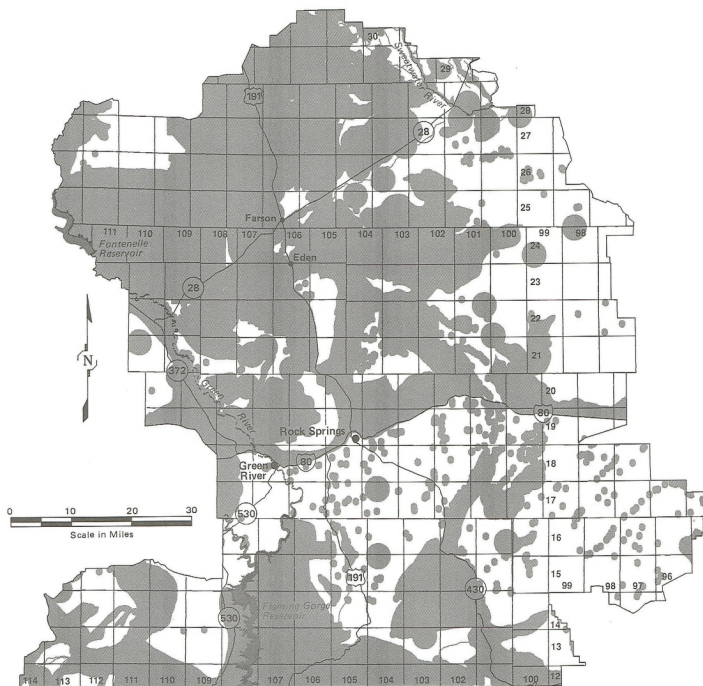
 No Lease Area

Map 31  
Alternative A  
**No Lease Areas**  
Green River Planning Area



■ No Surface Occupancy Area

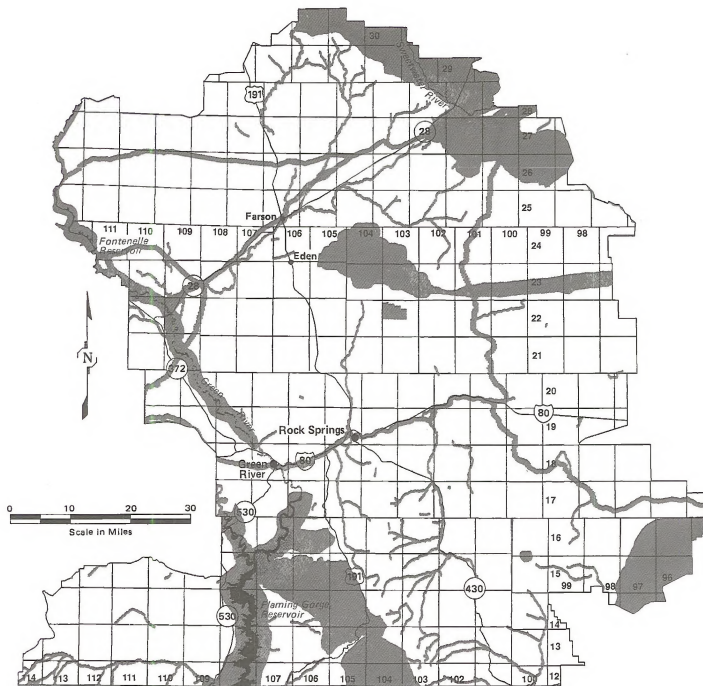
**Map 32**  
**Alternative A**  
**No Surface Occupancy Areas**  
**Green River Planning Area**



Seasonal Restriction Area

**Map 33**  
**Alternative A**  
**Seasonal Restriction Areas**  
**Green River Planning Area**





■ Surface Disturbance Restriction Area

**Map 34**  
**Alternative A**  
**Lease with Surface**  
**Disturbance Stipulations**  
**Green River Planning Area**

## ALTERNATIVES

These 76,608 acres would be subject to continued field investigations, studies and evaluations to determine if certain methods of coal mining can occur without having a significant long-term impact on wildlife, in general, and on threatened and endangered plant and animal species and their essential habitats. Such investigations, studies and evaluations may be conducted on an as-needed or case-by-case basis in reviewing individual coal leasing or development proposals (e.g., mine plans) or, if opportunities or needs arise, area-wide studies may be conducted. These studies would include keeping resource base data current (e.g., where existing raptor nests become abandoned or where new raptor nests become established), analysis of effects to wildlife and threatened and endangered species habitats and populations, and the cumulative effects of mining operations and other activities in the area. Consultation with other agencies (e.g., USFWS, WGFD, etc.), special interest groups, and with industry would occur as needed or required.

About 1,500 acres of Federal coal lands within the City of Rock Springs Expansion Area would be closed to further consideration for coal leasing and development.

About 50,714 acres of Federal coal lands would be open to surface coal mining methods.

Within this area, the area known as Cooper Ridge would be acceptable for further leasing consideration and coal development by surface mining methods, pending studies to determine the extent and importance of potential deer and antelope crucial winter range in the area and the extent and significance of coal mining impacts on the area.

About 87,214 acres of Federal coal lands would be open to subsurface mining methods.

Within this area, about 7,186 acres would be restricted to only very limited surface operations and impacts and about 1,280 acres would be restricted by a no surface occupancy requirement to protect utilities in ACECs, cultural values, recharge areas, and raptor habitat resource values and geologic facilities.

### **Areas of BLM-Administered Public Land Surface Overlying State-Owned Coal**

Of the 10,880 acres of BLM-administered public land surface overlying state-owned coal, about 7,840 acres would be open to surface coal mining methods and about 10,812 acres would be open to subsurface mining methods.

Of the 10,812 acres open to subsurface mining methods, about 470 acres would be closed to any

related surface operations and impacts to protect utilities and raptors.

Those parcels of BLM-administered public land surface overlying state-owned coal, that are within the planning area but were not reviewed in the coal unsuitability review and multiple use conflict evaluations, would be reviewed on a case-by-case basis, should the state lease the coal.

### **Preference Right (Coal) Lease Applications (PRLAs)**

Processing of the Beans Spring coal PRLAs (the one coal PRLA project proposal in the planning area) would be completed. In the preparation of the EIS for this PRLA project, special attention will be given to those sensitive value areas identified through the unsuitability review and multiple use conflict evaluation. The EIS will result in development of needed stipulations for the protection of sensitive values. These protective stipulations will be carried through the final processing and leasing decisions for the PRLA project, which will result in determining if the preference right applicant is successful in meeting the final showing requirements and is entitled to a preference right (non competitive) Federal coal lease for the Beans Spring coal project area (Appendix 3-2).

### **Solid Leasables (Sodium/Trona)**

**MANAGEMENT OBJECTIVES:** The objectives for management of the federal sodium (trona) resource would be to provide for both short- and long-range development of federal sodium (trona) in an orderly and timely manner.

**MANAGEMENT ACTIONS:** The known sodium/leasing area (Map 18) would be open to exploration and consideration for leasing and development, but would be closed to prospecting permits. The remainder of the planning area would be open to sodium prospecting except for areas closed to surface mining or mechanical prospecting type activities (areas closed to drilling, vehicle use, and explosive charges) (Table 2-11). Leasing would be considered on a case-by-case basis and management direction applied in this plan would be considered.

### **Mineral Materials**

**MANAGEMENT OBJECTIVES:** The objective for management of salable minerals would be to provide mineral materials in convenient locations for users while protecting surface resources.

**MANAGEMENT ACTIONS:** Sale areas and community pits would be established as required. Adequate

## ALTERNATIVES

mine and reclamation plans for both new and existing use areas would be developed.

Sales of mineral materials from established sites would be allowed. Proposed sales from new sites would be evaluated on a case-by-case basis.

No topsoil sale areas would be available.

Table 2-13 shows the areas that would be closed to mineral material sales.

### Locatable Minerals

**MANAGEMENT OBJECTIVE:** The objective for management of locatable minerals would be to provide opportunities to locate and develop claims while protecting other resource values.

**MANAGEMENT ACTIONS:** With the exception of lands withdrawn from locatable minerals, the planning area would be open to mineral exploration, location, and development. The existing mineral classification withdrawals (phosphate, coal, and oil shale) would remain in place (Table 2-7). Table 2-6 lists proposed withdrawals.

### Geophysical

**MANAGEMENT OBJECTIVE:** The objective for management of geophysical management activity would be to provide opportunity for exploration of mineral resources or scientific uses, while protecting other resource values.

**MANAGEMENT ACTIONS:** The entire planning area would be open to consideration for geophysical exploration, subject to appropriate environmental analysis and surface protection stipulations. The areas listed in Table 2-14 would be closed to the use of geophysical and explosive charges.

ORV management prescriptions for the use of vehicles would not apply in all areas. Vehicles would not be limited to existing roads and trails unless a site specific analysis determines it is necessary (see Off-Road Vehicle Management for this alternative).

Geophysical vehicle travel through developed and semi-developed recreation sites would be restricted to established roads and trails.

Geophysical vehicles would be limited to existing roads and trails in South Pass (5,260 acres).

Geophysical activities would be limited to within 1/4 mile or visual horizon (whichever is closer) of historic trails.

See other resource management prescriptions in this document for other restrictions that may apply to minerals management activities.

### Off-Road Vehicle Management

**MANAGEMENT OBJECTIVE:** The objective for off-road vehicle management would be to provide opportunities for off-road vehicle use in conformance with other resource objectives.

Some types of motor vehicle use would be allowed under the "necessary tasks" work exemption provided resource damage did not occur. Examples of necessary tasks include picking up big game kills, repairing range improvements, managing livestock, and geophysical activities associated with oil and gas exploration.

**MANAGEMENT ACTIONS:** Off-road vehicles would be managed according to the designations in the ORV plans (Table 2-23 and Map 35).

Travel in wildlife crucial habitats (strutting grounds, spawning beds, big game ranges, etc.) (Table 2-4) would be limited to existing roads and trails.

Travel would be restricted to certain designated roads during elk calving and deer parturition/fawning periods and in sensitive watersheds.

Generally, over-the-snow vehicle use would be subject to the prescriptions described in Table 2-23 unless a site specific analysis determines otherwise.

An ORV implementation plan would be prepared to replace the two existing ORV plans. This ORV plan would reflect the ORV designations made in this plan.

Off-road vehicles refers to mechanical and mechanized vehicles such as mountain bikes and big game carriers. The implementation plan would consider mountain bike and other mechanized vehicles needs. Some types of motor vehicle use would be allowed under the "necessary tasks" work exemption provided resource damage did not occur. Examples of necessary tasks include picking up big game kills, repairing range improvements, and managing livestock. Approximately 137,672 acres would remain closed to off-road vehicle use to protect naturalness, solitude, and opportunities for unconfined recreation.

# ALTERNATIVES

TABLE 2-23

## ORV DESIGNATIONS (Alternative A)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>Aboriginal Quarry Site</b> Closed	160	Whole area closed to protect cultural values.
<b>Big Game Winter Ranges</b> Limited through seasonal closures (Nov. 15 - April 30 as needed)	1,500,000	To reduce stress to wintering animals.
<b>Candidate Plant Species</b> Closed	3,110	Closed yearlong to protect plant populations (does not apply to over-the-snow vehicles).
<b>Cedar Canyon ACEC</b> Limited to existing roads and trails	2,550	To protect wildlife and cultural values. No over-the-snow vehicles allowed in area.
<b>Crookston Ranch</b> Closed	40	Crookston Ranch in Sand Dunes ACEC is closed to vehicle traffic to protect historic site.
<b>Currant Creek/Sage Creek</b> Limited to existing roads and trails, applies to over-the-snow vehicles	75,900	To protect sensitive fisheries and watershed values.
<b>Deer Parturition Areas</b> Limited through closures (May 1 - June 30 as needed)	40,880	To reduce stress to deer.
<b>Dry Sandy Swales</b> Closed	20	Whole area closed to protect integrity of setting and soils.
<b>Dug Springs Station</b> Limited to designated trails.	10	To protect historic values.
<b>Elk Calving Areas</b> Limited through seasonal closures to be decided by biologist (May 1 - June 30 as needed)	85,830	To reduce stress to elk.
<b>General GRRRA</b> Limited to existing roads and trails	3,066,310	Limited to existing roads and trails to reduce resource damage and limit new overnight roads.
<b>Greater Sand Dunes ACEC</b> Open	10,500	Area designated open on active dunes to allow recreating public a place to play in the sand dunes.
Limited to existing	6,000	Limited to existing roads and roads and trailstrails to protect ACEC values.
<b>Green River City Limits</b> Closed	4,500	Hillsides and steep slopes within 2-mile radius around the city limits are closed to vehicles includ- ing snowmobiles in cooperation with the Green River City ordinance to prevent impacts from ORVs.

# ALTERNATIVES

TABLE 2-23 (Continued)

## ORV DESIGNATIONS (Alternative A)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>LaBarge Bluffs Petroglyphs</b> Closed	20	Whole area closed to protect cultural values.
<b>LaCiede Stage Station</b> Limited to designated trails	10	To protect historic values.
<b>Monument Valley Area</b> Limited to existing roads and trails	64,300	To protect wildlife habitat and fragile soils.
<b>Moose Calving Areas</b> Limited through seasonal closures to be decided by biologist (May 1 - June 30 as needed)	410	To reduce stress to moose.
<b>Natural Corrals ACEC</b> Closed	20	NRHP site and the trail 1/2 mile to the spring are closed to protect wildlife and cultural values.
Limited to existing roads and trails	1,300	Limited to existing roads and trails to protect wildlife and cultural values.
<b>North &amp; South Table Mountains</b> Limited to existing roads and trails	1,280	To protect cultural and wildlife values.
<b>Oregon Buttes ACEC</b> Closed	3,450	ACEC closed to protect ACEC values.
<b>Parting of the Ways</b> Closed	40	Whole area closed to protect historical values.
<b>Pine Springs ACEC</b> Closed	90	Closed yearlong within fences including over-the- snow vehicles to protect cultural and prehistoric values.
Limited to existing roads and trails	90	Vehicles limited to access road to protect cultural and prehistoric values.
<b>Pine Springs Expansion Area</b> Closed	5,300	Closed yearlong, including over-the-snow vehicles to protect cultural and prehistoric values.
Limited to existing roads and trails	730	To protect cultural values.
<b>Raptor Nesting Areas</b> Limited through seasonal closures (Feb. 1 - July 31)	890	To protect nesting raptors.
<b>Red Creek ACEC</b> Closed	8,020	Closed to protect watershed values.
Limited to existing roads and trails	59,400	To protect watershed values.

## ALTERNATIVES

**TABLE 2-23 (Continued)**

### ORV DESIGNATIONS (Alternative A)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>Riparian Areas</b> Limited to existing roads and trails	8,730	To protect soils and watershed values.
<b>Sage Creek Mountain</b> Limited to existing roads and trails	1,300	To protect cultural values and T&E plants.
<b>South Pass</b> Closed Limited to existing roads and trails	41,400 46,180	Closed to protect cultural and scenic values. To protect cultural values.
<b>Steamboat Mountain</b> Limited through seasonal closures	43,010	To protect wildlife values.
<b>Steep Slopes of White Mountain</b> Limited to existing roads and trails	68,640	To protect watershed and visual values.
<b>Sugarloaf Petroglyphs</b> Closed	20	Whole area closed to protect cultural values.
<b>Tolar Petroglyphs</b> Closed	20	Whole area closed to protect cultural values.
<b>White Mountain Petroglyphs ACEC</b> Limited to existing roads and trails	20	Limited to existing roads and trails to maintain integrity of setting and reduce theft and vandalism.

Geophysical vehicle use would conform to some ORV management prescriptions. Use of vehicles would not be limited to existing roads and trails unless a site specific analysis determines it is necessary.

See other resource management prescriptions in this document for other restrictions that may apply to off-road vehicle management activities.

### Recreation Resource Management

**MANAGEMENT OBJECTIVES:** The objectives for recreation management would be to ensure the continued availability of outdoor recreational opportunities sought by the public while protecting other resources. Other objectives would be to meet legal requirements for the health and safety of visitors and to mitigate conflicts between different types of resource users.

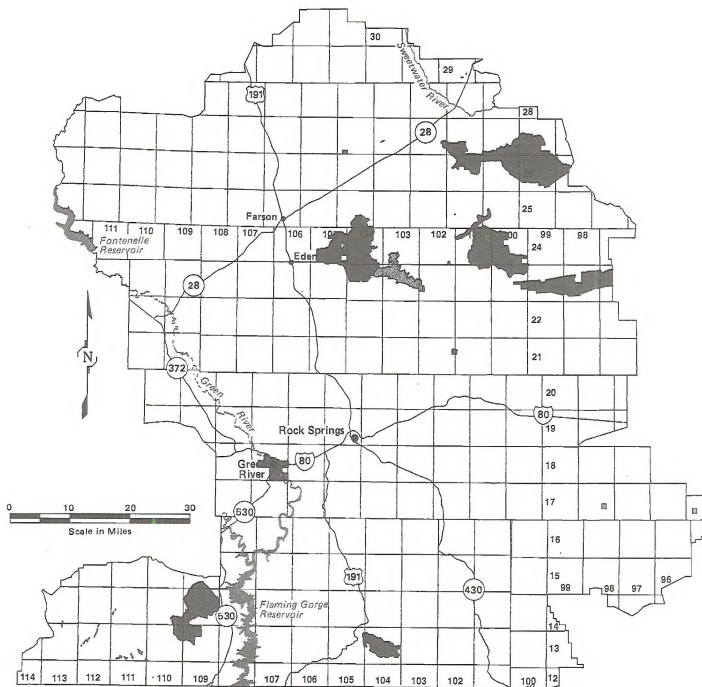
**MANAGEMENT ACTIONS:** Most public lands in the planning area would be open and available for consider-

ation to all individual, commercial, and competitive outdoor recreation uses. The existing developed and undeveloped recreation areas would be managed to insure that the sites provide maximum benefit to the visitor.

A 14-day camping limit on all public lands would be maintained. Camping would be limited to 14 days within a 28-day consecutive period. After the 14th day of occupation, campers must move outside a 5-mile radius of the previous location. Camping would be allowed adjacent to crucial wildlife and livestock waters. Dispersed camping in riparian areas would be allowed with a 100-foot buffer from water. Areas can be closed if resource damage is indicated.

Special recreation permits would be allowed on a case-by-case basis. Necessary mitigation for special recreation permits, commercial recreation uses, and major competitive recreation events would be included to provide resource protection and public safety.





- Closed
- Designated Roads and Trails
- Limited to Existing Roads and Trails
- Open

**Map 35**  
**Alternative A**  
**Off Road Vehicle Designations**  
**Green River Planning Area**



## ALTERNATIVES

The Wind River Front, Sweetwater River, Big Sandy River, Green River, Oregon Buttes, Honeycomb Buttes, Steamboat Mountain, Killpecker Sand Dunes, Leucite Hills, Red Creek, Pine Mountain, Little Mountain, and Cedar Canyon areas would be managed to assure their continuing value for recreational opportunities (Map 21). Recreation Area Management Plans would be prepared for these areas.

The Killpecker Sand Dunes, and Oregon and Mormon Pioneer National Historic Trails, (about 107,100 acres) would be managed as special recreation management areas. Existing management plans for the trail and the Greater Sand Dunes ACEC would be implemented.

Recreation project plans and an interpretive prospectus would be developed for the Sweetwater Campground, Boar's Tusk, Leucite Hills, the Continental Divide Snowmobile Trail, and the Farson fossil fish beds. Interpretation for wild horse viewing would also be provided.

The integrity of the Continental Divide Snowmobile Trail would be maintained by limiting large surface-disturbing activities and structures on or within ¼ mile of the trail (2,330 acres). Such actions would be designed to avoid this area unless a site specific analysis determines that adverse effects to the trail would not occur. The area would be open to the development of shelters and facilities to enhance the management of the snowmobile trail.

Mountain bike trail opportunities would be explored.

Recreational use along the Green River, Sweetwater River, Big Sandy River, and Bitter Creek between Rock Springs and Green River, would be identified and recreation area management plans would be developed. The establishment of a "greenbelt" along the Green River from Fontenelle Dam to Flaming Gorge Reservoir would be supported.

Backcountry byways would not be considered.

Recreation site facilities would be allowed within 500 feet of riparian areas and floodplains provided proper mitigation and exceptions to Executive Order 11988 and 11990 apply.

The natural values of Boar's Tusk, Pilot Butte, and Emmons Cone would be protected from surface disturbance and the integrity of the geologic features would be

maintained. No surface occupancy would be allowed on Boar's Tusk, Pilot Butte, and Emmons Cone (270 acres), unless activity would enhance management of these features (Table 2-21 and Table 2-4). Interpretive facilities would be allowed.

The 14-Mile recreation area would be closed to development activities such as those associated with mineral development, pipelines, powerlines, or well pads unless activities would enhance the recreation resource management. No recreation management plan would be developed for the 14-Mile recreation site.

Surface disturbance on recreation sites (6 developed, 5 semi-developed, 14 undeveloped) would be restricted to protect recreation values. An approved plan would be required prior to the site disturbance.

See other resource management prescriptions in this document for other restrictions that may apply to recreation resource management activities.

## Vegetation Management

**MANAGEMENT OBJECTIVES:** The objectives for management of vegetation would be that vegetation treatments (mechanical, biological, fire) would be used to remove stands of brush in specific areas to meet wildlife, watershed, and wild horse management objectives and provide for plant diversity to meet wildlife and livestock management objectives.

**MANAGEMENT ACTIONS:** Approximately 26,000 acres have been identified for vegetation manipulation to increase forage and enhance habitat.

Prescribed fire would generally be the preferred method of vegetation manipulation to convert decadent stands of brush to grasslands and to promote regeneration of aspen stands and/or shrub species.

Prescribed burns may be conducted in crucial big game winter ranges if habitat values would improve for these species.

All vegetation treatments would be designed irregular in shape for edge effect, cover, and visual esthetics.

No more than 10 percent of sagebrush within antelope and mule deer winter ranges would be treated in a 10-year period. Treatment areas would be irregular in shape (9,700 acres). This would apply to federally administered winter range only.

## ALTERNATIVES

Treatment units within VRM Class II areas would not exceed 40 acres in size and no more than 10 percent of the area would be treated within a 10-year period (5,650 acres). Treatment areas would be irregular in shape.

No more than 20 percent of sagebrush within 2 miles of sage grouse leks would be treated within a 10-year period. Treatments would be irregular in shape.

Vegetation buffer strips of 100 feet would be left intact adjacent to perennial streams.

The inner gorge of intermittent and ephemeral drainages should be burned in such a manner as to leave mosaic patterns or unburned areas of vegetation. No more than 50 percent of the cover in the inner gorge area may be treated.

Herbicide loading sites would be located at least 500 feet from live water, floodplains, or riparian areas and would be utilized in accordance with the guidelines in Appendix 9-5. Treatments would adhere to all label directions.

See other resource management prescriptions in this document for other restrictions that may apply to vegetation management activities.

### Visual Resource Management

**MANAGEMENT OBJECTIVE:** The objective for visual resource management would be to maintain or improve scenic values and visual quality.

**MANAGEMENT ACTIONS:** VRM classes would remain the same (Table 2-16 and Map 36).

The scenic values along Highway 28 within Fremont County (12.5 miles) would be protected and managed as a Class II visual area. All proposed lands actions within view of the highway would be evaluated for impacts and mitigated to protect the scenic value of this historical area. Other major highways would be managed under the current VRM classifications.

The South Pass area would be managed for Class II visual values (87,540 acres).

The White Mountain Wild Horse Herd viewing area would be closed to surface disturbing activities and to facilities or actions that would visually interfere with the special viewing turnout to be established along Highway 191.

All activities that could be viewed from the Fontenelle Reservoir would be designed to be subordinate to the landscape.

See other resource management prescriptions in this document for other restrictions that may apply to visual resource management activities.

### Watershed/Soils Management

**MANAGEMENT OBJECTIVES:** The objectives for watershed/soils management would be to stabilize and conserve soils, to increase vegetative production, to maintain or improve water quality, and to protect, maintain, or improve wetlands, floodplains, and riparian areas.

**MANAGEMENT ACTIONS:** Channel erosion, specifically bank erosion, would be reduced where it has resulted in severe losses of riparian habitat, and accelerated surface erosion would be reduced in areas having severe erosion susceptibility.

Sediment, phosphate, and salinity load would be reduced in the planning area, where possible.

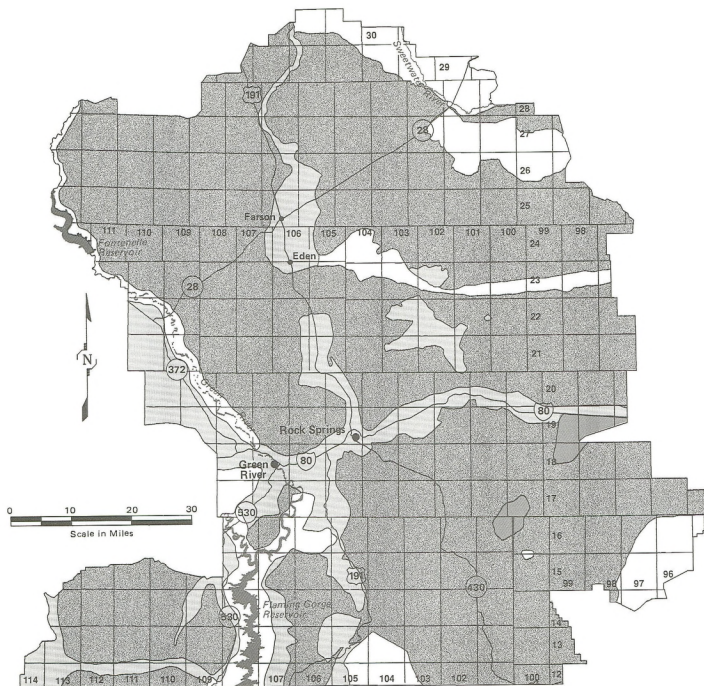
Those areas where the soils are highly erodible or difficult to reclaim would receive increased attention to soils conditions.

BLM would participate with federal and local government agencies in the development and implementation of plans to reduce salinity in the Jack Morrow and Eighteenmile Canyon watersheds and the Big Sandy Seeps and in the development and implementation of plans to reduce phosphates delivered to the Fontenelle and Flaming Gorge Reservoirs.

Roads and trails, seismic lines, rights-of-way, and oil and gas sites would be identified to determine those causing erosion and water quality degrading problems and rehabilitation plans would be developed. Areas that have been identified for inventory include Cedar Canyon, Little Colorado Desert, Red Creek, and Sage Creek/Currant Creek.

Stream water at undeveloped recreation sites would be monitored; if found not potable, signs would be posted.

Watershed management plans would be directed at reducing erosion and sediment yield and enhancing water quality. The Red Creek Watershed Management Plan would be updated.



- Class II
- Class III
- Class IV
- Rehabilitation Area

**Map 36**  
**Alternative A**  
**Existing Visual**  
**Resource Management**  
**Green River Planning Area**

## ALTERNATIVES

Surface disturbing activities would avoid the areas within 500 feet of 100-year floodplains, wetlands, or perennial streams and their associated wetlands. Surface disturbing activities would also avoid the area within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages, unless an approved plan to mitigate impacts to water quality could be developed. Linear crossings would be considered on a case-by-case basis.

Floodplains, wetlands, or riparian areas would be closed to new permanent facilities (no surface occupancy), but linear crossings would be considered with proper mitigation. Consideration for permanent recreation site facilities in existing use areas would be made provided proper mitigation and exceptions to Executive Order 11988 apply.

Vegetative buffer strips would be maintained between developed recreational facilities and live water.

Reserve and production pits would be lined on a case-by-case basis (Appendix 5-1).

BLM would participate with federal and local government agencies in the development and implementation of plans to reduce salinity in the Jack Morrow and Eighteenmile Canyon watersheds and the Big Sandy Seeps and in the development and implementation of plans to reduce phosphates delivered to the Fontenelle and Flaming Gorge Reservoirs.

Surface disturbing activities would avoid slopes greater than 25 percent (198,720 acres) or activity during wet and muddy periods would be allowed only with an approved plan and acceptable mitigation.

Large or heavy truck traffic would avoid activities during wet periods unless the roads are graveled for all season use.

Crossings of ephemeral, intermittent, and perennial streams associated with road and utility line construction would be restricted until after spring runoff and normal flows are established. Exceptions may be approved in written authorization from the Area Manager.

Areas where groundwater was less than 100 feet in depth from the surface and have a permeability of no more than 0.1 foot/day would be closed to any plant, mill, or associated tailing pond and sewage lagoon.

Roads would be constructed as described in BLM Manual 9113. New main artery roads would be designed to reduce sediment, salt, and phosphate loading to the Green River.

Recharge areas would be managed to protect groundwater quality. Activities within the Superior recharge area would be designed to protect groundwater quality and allowed only if groundwater quality would be protected.

See other resource management prescriptions in this document for other restrictions that may apply to watershed or soils management activities.

## Wild Horse Management

**MANAGEMENT OBJECTIVES:** The objectives for management of wild horses would be to protect, maintain, and control a viable, healthy herd of wild horses while retaining their free-roaming nature; to provide adequate habitat for free-roaming wild horses by management consistent with environmental protection; and to provide opportunity for the public to view wild horses.

**MANAGEMENT ACTIONS:** Horses would be managed within four existing Wild Horse Herd Management areas (Map 25). An appropriate management level (AML) of 1,036 to 1,600 horses would be maintained (Table 2-24).

Adequate forage for all wild horse populations (16,200 AUMs) would be reserved.

Management plans for the 4 wild horse herd management areas in the planning area would be implemented.

Horses would not be maintained or managed in the Figure Four Allotment of the Desert Common-Figure Four Interim Wild Horse Herd Management Area. Gathering would occur to remove exiting horses in the area.

Fertility and selective gathering programs would be implemented in each of the wild horse areas. These actions would aid in stabilizing populations, managing for conditions and special characteristics, and supplying an adoptable population (young horses). Gathering cycles would vary depending upon plan objectives, resource conditions, and needs. See Table 2-25 for estimated populations based on a 3-year gathering cycle.



## ALTERNATIVES

### TABLE 2-24

#### WILD HORSE POPULATIONS AND APPROPRIATE MANAGEMENT LEVELS<sup>1</sup> (ALTERNATIVES A AND B)

Area	Current AML	Excess Population	Post-1992 Foaling Horses	Estimated		Removed
				Summer 1992 Excess Population <sup>2</sup>	Excess Horses to be Horses	
Great Divide Basin WHHMA	415-600	475	0	571	71	0-62
White Mountain WHHMA	205-300	273	23	328	78	28-123
Salt Wells Creek WHHMA	251-365	623	258	747	382	382-496
Little Colorado Area	0	120	120	144	144	0
Adobe Town <sup>3</sup>	165-235	297	62	357	122	122-192
Firehole Area	0	16	16	19	19	16-19
North Baxter/ Jack Morrow	0	72	72	86	86	72-86
Pinedale RA	0	10	10	12	12	10-12

<sup>1</sup> 1992 Data. Cycle would repeat every two years.

<sup>2</sup> Estimated post-1992 foaling populations are based on a 20 percent increase.

<sup>3</sup> Only Rock Springs District portion.

Fencing would be restricted to those situations where it would enhance multiple-use values. All new fences would be constructed in such a manner as to minimize restriction of wild horse movement. Water developments would not be placed in crucial wildlife winter habitat unless consistent with habitat needs of the wildlife species.

Water developments or improvements would not be proposed primarily to enhance wild horse management.

WHHMA's would be managed in a healthy state and for an ecological balance among wild horses and land and resource uses.

See other resource management prescriptions in this document for other restrictions that may apply to wild horse management activities.

## Wildlife Management

**MANAGEMENT OBJECTIVES:** The objective for management of wildlife habitat would be to maintain biological diversity of plant and wildlife species within habitat capabilities. Provide suitable wildlife habitat and forage to support the Wyoming Game and Fish Department 1989 Strategic Plan objectives. Provide and maintain habitat for threatened, endangered, and sensitive plant and animal species through mitigation measures and other management actions.

The objective for management of wetlands/riparian areas would be to achieve a healthy and productive condition for long-term benefits and values in concert with range, watershed, and wildlife needs.

TABLE 2-25

**ESTIMATED POPULATION INCREASE BASED ON 3-YEAR GATHERING CYCLE  
(ALTERNATIVES A & B)**

Area	AML	Year 1 Post- Current Population	Year 1 Post- Season Foaling Population <sup>1</sup>	Year 1 Population	Year 2 Post- Season Foaling Population <sup>1</sup>	Year 2 Population	Year 3 Post- Season Foaling Population <sup>1</sup>	Year 3 Population	Excess Wild Horses
Great Divide Basin WHHMA	415-600	415	50	465	56	521	62	583	0-168
White Mountain WHHMA	205-300	205	25	230	28	258	31	289	0-84
Salt Wells Creek WHHMA	251-365	251	30	281	34	315	38	353	0-102
Little Colorado Area	0	120	14	134	16	150	18	168	0-168
Adobe Town <sup>2</sup>	165-235	165	20	185	22	207	25	232	0-94

<sup>1</sup> Estimated post-season foaling populations are based on a 12 percent increase and implementation of a fertility program.

<sup>2</sup> Only Rock Springs District portion.

## ALTERNATIVES

**MANAGEMENT ACTIONS:** High value wildlife habitats would be maintained or improved through restrictive habitat alteration, appropriate distance and seasonal restrictions, and rehabilitation standards. These habitats include crucial winter habitat, sensitive fisheries habitat, etc.

Sage grouse leks and within 1/4 mile of the lek would be closed to surface disturbing activities (e.g., mineral development activities, roads, pipelines, powerlines, etc.). Seasonal restrictions within a 1.75-mile radius (447,170 acres) from leks to protect nesting habitat would apply (Table 2-10 and Table 2-21).

Seasonal restrictions for surface disturbing activities to protect game fish populations during spawning (210 miles) would be applied as necessary.

Nesting raptors would be protected by restricting activities within 1/2 to 1 mile radius of active or historic raptor nesting sites (depends on species) (260,020 acres) (Table 2-10). Active or historic raptor nesting sites would be protected and managed for continued nesting activities (Table 2-21).

The CMA with the WGFD for annual monitoring and maintenance of wildlife waters would be continued. Types of livestock water developments in big game winter ranges would be restricted (approximately 1.5 million acres) to avoid overuse of crucial wildlife winter forage.

Special management exclosures, riparian management exclosures, and existing exclosure plans for enhancement of wildlife habitat would be maintained as needed. Forage (AUMs) within all exclosures would be withdrawn from livestock use in the respective grazing allotments.

Riparian habitats and wetlands would be maintained in a proper functioning condition (95,550 acres). About 75 percent of riparian areas would achieve proper functioning condition within 10 years. Aquatic, wetland, and riparian habitat would not be suitable for disposal unless opportunities exist for land exchange for lands of equal or better value.

Fences that are documented to be a problem to migratory big game would be modified to conform to BLM fence standards within 4 years following problem identification.

Disturbed or altered habitat would be restored with the objective to attain desired native plant communities, while providing for wildlife needs and soil stability.

Animal damage control would be allowed with stipulations for public safety and safety of domestic animals. M-44s and other predicides or toxins would not be used.

Habitat improvement plans would be developed for high development oil and gas areas to mitigate habitat losses. Such actions as preparing transportation plans and reclaiming roads, seeding, and vegetation enhancement (vegetation treatments, fencing), water developments, and reclamation actions to reduce the amount of future disturbance would be considered.

See other resource management prescriptions in this document for other restrictions that may apply to wildlife management activities.

## Special Management Areas

### Candidate Plant Species (31,340 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of four candidate plant species would be to protect candidate plant species and their important habitats.

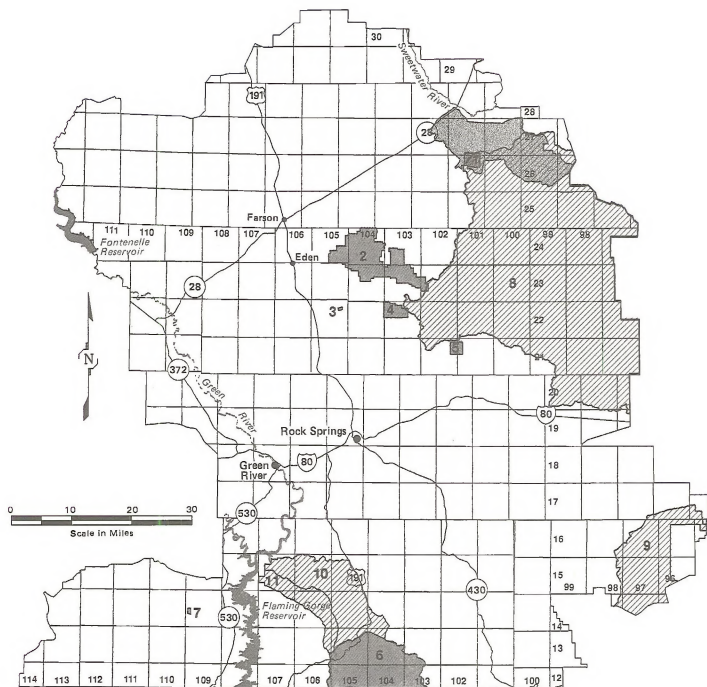
**MANAGEMENT ACTIONS:** No ACEC would be designated for *Thelesperma pubescens*, *Descurainia torulosa*, *Astragalus proimanthus*, or *Arabis pusilla*.




**MANAGEMENT ACTIONS:** Known locations of candidate plant species communities (33 locations, about 440 acres) (see Map 37) would be closed to: 1) surface disturbing activities that could adversely affect the candidate plant species and their habitat (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-21); 2) mineral material sales; 3) off-road vehicular travel including those used for geophysical exploration activities; and 4) oil and gas leasing and surface mining activities or facilities associated with leasable minerals.

The 440 acres would be open to the location of mining claims, and a withdrawal from mineral location would not be pursued. Known plant locations would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the plant species.

Any management actions in potential habitat of candidate plant species communities (about 30,900 acres) would require searches for the plant species prior to implementing projects and activities.





- |  |  |   |                 |
|--|--|---|-----------------|
|  | Existing ACECs                         |  | Other Areas     |
| 1  | Oregon Buttes                          | 8   | Red Desert Area |
| 2  | Sand Dunes                             | 9   | Monument Valley |
| 3  | White Mountain Petroglyphs             | 10  | Sage Creek      |
| 4  | Cedar Canyon                           | 11  | Current Creek   |
| 5  | Natural Corals                         |   |                 |
| 6  | Red Creek                              |   |                 |
| 7  | Pine Spring                            |   |                 |
|  | Proposed South Pass Historic Landscape |   |                 |

Note: Tri-State Monument is composed of Current Creek, Red Creek, and Sage Creek

**Map 37**  
**Alternative A**  
**Special Management Areas**  
**Green River Planning Area**

## ALTERNATIVES

These areas would be closed to activities that could adversely affect the plant species and habitat, where candidate plants and important habitat are located.

Potential habitat areas would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the plant species. Off-road vehicle use and fire suppression activities would be limited to the use of existing roads and trails.

### Cedar Canyon ACEC (2,550 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Cedar Canyon ACEC would be to provide protection and enhancement of cultural values, scenic values, and wildlife habitat.

**MANAGEMENT ACTIONS:** The Cedar Canyon ACEC would be retained.

The entire ACEC would be open to consideration for mineral leasing with restrictions to protect cultural and wildlife values, particularly raptor, big game winter range, and watershed values (Table 2-10). The entire ACEC would be open to the location of mining claims.

Prescribed management actions for livestock grazing would include continuous monitoring and establishment of riparian objectives.

Highly erodible soil areas throughout the ACEC would be managed to maintain or reduce erosion levels and improve vegetation cover. Guidelines necessary to protect these areas would be developed. Engineering design and mitigation plans would be required for surface disturbing activities on slopes in excess of 12 percent grade would be required to ensure unacceptable impacts would not occur to ACEC values.

The various recreational activities such as camping, picnicking, hunting, and winter sports that occur in the area would be developed, maintained, preserved, or enhanced to provide for an optimum and satisfying visitor experience. Facilities and projects would be signed to provide information about sites in the area and directions for travel through the ACEC.

The ACEC would be open to over-the-snow vehicles. All roads would be maintained and surfaced according to standards. Properly sized culverts would be placed accordingly. Additional access would be acquired to this ACEC. Signing and closing of all nonessential roads and trails would be accomplished.

The ACEC would be managed in accordance with Class II visual resource management standards to protect, maintain, and enhance the visual resource values. All future facilities would be designed to blend with the landscape, camouflage painted, and seeded to keep visual resource impacts to a minimum.

The Cedar Canyon NRHP site which contains the petroglyphs (20 acres) would be closed to: 1) surface disturbing activities that could adversely affect the petroglyph site (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-21 and Table 2-5); 2) to mineral material sales; 3) to off-road vehicle travel (includes ½ mile of road); 4) to the use of explosives and blasting, seismograph vehicles and vibroseis operations; and 5) to the use of fire retardant chemicals containing dyes.

Coal leasing would be considered; however, no surface mining and no facilities would be allowed on the petroglyphs. The 20-acre site would be open to consideration for only portable geophysical activities.

The remainder of the ACEC (2,530 acres) would be an avoidance area for surface disturbing activities, but activities could be considered provided no unacceptable adverse impacts to ACEC values would occur and activities could be reclaimed and blend with the landscape. New rights-of-way should follow existing roads and rights-of-way wherever feasible (Table 2-5). Surface mining would not be allowed; however, limited surface facilities could be considered (on all but 260 acres which would be unacceptable for any surface facilities) if they meet the management requirements for the ACEC.

The remainder of the ACEC (2,530 acres) would be open to: 1) the location of mining claims; 2) to mineral material sales; and 3) seismograph activity including the use of explosives and blasting, provided ACEC values could be protected. Off-road vehicle use, including seismograph vehicles, would be limited to existing roads and trails and would be restricted during winter and spring.

### Greater Sand Dunes ACEC (41,640 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Greater Sand Dunes ACEC would be to preserve and protect the integrity of their unique values for future use and enjoyment, including unusual geological features associated with the sand dunes and the Boar's Tusk, and the geological and biological inter-

## ALTERNATIVES

relationships supported by the dunes, especially the Steamboat desert elk herd, mule deer herd, and other dependent plants and animals.

**MANAGEMENT ACTIONS:** The Greater Sand Dunes ACEC (41,640 acres) would be retained.

### General ACEC

The ACEC would be managed for Class II visual values. The visual impacts of existing facilities (e.g., producing wells) would be evaluated and, to the extent reasonable, the impact mitigated.

Any surface disturbing activities within the Wasatch and Green River Formations would require a paleontological clearance. Surface disturbing activities would avoid the area within 1/2 mile of recreation sites (approximately 2,240 acres).

The ACEC and the area within one mile or the visual horizon of the ACEC would be an avoidance area for new rights-of-way (approximately 70,850 acres). In particular, large kilovolt powerlines would be managed to avoid the ACEC. Oil and gas development prescribed in the Eastern Portion discussion is excluded from this restriction.

The ACEC would be closed to mineral material sales.

Livestock grazing would continue at established grazing levels. Monitoring of grazing use within the allotments to ensure utilization maintenance and improvement of the vegetative resource would occur. Key plant species utilization would not exceed 50 percent of the total annual growth.

Maintenance and use of existing necessary rangeland improvements would be allowed. Proposed rangeland improvements must be part of an allotment management plan, be consistent with the objectives of the ACEC, and have an environmental assessment prepared which considers the authorization of rangeland improvement construction and/or maintenance, and the use of motor vehicles, motorized equipment, and mechanical transport.

Materials used for new or existing improvements must harmonize with the natural character of the area to reduce the impact of artificial objects on the natural environment.

Wild horse use in the ACEC would be managed as part of the natural ecosystem and would be consistent with the Divide Basin Wild Horse Management Plan and

ACEC objectives. No traps would be constructed in the entire ACEC.

To support the diversity of wildlife species occurring within the ACEC, wildlife habitat would be protected, maintained, and enhanced. Crucial winter range in the ACEC area would be maintained as an essential component to the Steamboat Mountain-Sands elk herd.

Habitat improvement projects on the ponds for bird, amphibian, and mammal use would be developed after habitat condition and project suitability were determined.

Interpretive materials and educational programs including a wildlife picture brochure would be developed to describe the wildlife and cultural resource values of the 41,640-acre ACEC.

Native vegetation would be maintained and protected to allow natural succession to continue free from unnecessary surface disturbance. Revegetation of disturbed areas with big sagebrush and other adapted shrub seeds would be required where appropriate to help improve big game habitat.

A diversity of non-motorized recreation uses, including hiking, bird-watching, photography, sightseeing, and hunting, would be encouraged. Appropriate recreation facilities would be developed and maintained. No roads would be designated as backcountry byways (see Map 20). Camping would be restricted to the BLM 14-day limit, and subject to "Pack In-Pack Out" requirements for trash, etc. (see Recreation Resource Management for this alternative).

### Western Portion

Management of the ACEC included in Buffalo Hump and Sand Dunes WSAs (25,250 acres) is guided by the "Interim Management Guidelines for Lands Under Wilderness Review." Wilderness management would not be addressed unless management of the area is more stringent than either the interim management policy or wilderness policy.

The 25,250-acre western part of the ACEC would be closed to motorized vehicle travel, including over-the-snow-vehicles, to maintain the unique naturalness, solitude, and primitive and unconfined recreational opportunities.

This portion would remain closed to oil and gas leasing (Table 2-21), location of mining claims, and to geophysical activities. Withdrawals would be pursued as necessary (Table 2-6).

## ALTERNATIVES

About 4,360 acres that are in the coal potential area would be unsuitable for further consideration for coal leasing.

Lands would be acquired through exchange to improve the manageability of the area (1,920 acres).

### Eastern Portion

The eastern portion of the ACEC (about 16,390) acres would be open: 1) to mineral leasing and development activities, subject to constraints to protect ACEC values; 2) for further construction and development and surface occupancy (on stabilized dunes only in the undeveloped areas, about 10,390 acres); 3) for additional producing wells or temporarily shut-in wells on 6,000 acres provided the number would not exceed three wells per section; and 4) to geophysical activities (including vehicular travel) provided resource protection would be ensured and actions conform with the ORV plan.

Developments would be designed to allow continued access to or use of developed and semi-developed recreation sites.

Approximately 9,840 acres with coal potential would be closed to surface mining and surface facilities.

Surface disturbing activities, geophysical activities, and drilling, completion, and production facility installation activity would be restricted on crucial big game winter ranges and birthing areas (Table 2-10). Exception from this restriction may be approved if conditions described in Appendix 7-1 apply. Once an oil and gas drilling/completion operation starts, it would be allowed to be completed into or through the winter. Decision points for shutdown due to unacceptable winter conditions would occur between pad construction and drilling startup, and between drilling/completion and facility installation.

Surface water, soils, and shallow aquifers would be protected from development activities by utilizing such practices as a closed drilling system or a 12-mil or thicker synthetic liner. Pit liners would be removed prior to reserve pit reclamation. The use of ponds as water sources for development activity would not be allowed.

All new pipelines and powerlines within the existing area of development would be buried adjacent to access roads or within existing concentration areas containing such lines. All new pipelines within the stabilized dune areas would be installed on the ground as surface lines

to avoid unnecessary disturbance of vegetation. Powerlines would be buried. Existing surface pipelines would be monitored by the oil and gas operators and those exposed pipe segments, which could be hazardous to ORV users, would be marked to improve visibility.

Any proposed activity or surface use that would involve surface disturbance (e.g., construction activities, such as roads, well pads, pumping or storage facilities, pipelines, or geophysical exploration etc.) would be accompanied by appropriate engineering design, geotechnical analysis, mitigation planning, etc.

Abandoned pipelines, unnecessary facilities (e.g., snow fence), etc., in unstabilized dune areas would be removed.

In cooperation with the oil and gas operators, a recreation user map would be developed that shows the locations of aboveground facilities (e.g., pipelines, well production facilities, snow fences, etc.).

About 10,390 acres would continue to be designated open to off-road vehicle travel on the active sand dunes and limited to existing roads and trails on 6,000 acres in the stabilized dune areas.

### Crookston Ranch and Boar's Tusk

The area within a ½ mile radius of Crookston Ranch and the Boar's Tusk (590 acres) would be closed to surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-21 and Table 2-5); to mineral material sales for sand, gravel or other types of construction or building materials; to surface coal mining activities and any related facilities associated with mining; and to the use of explosives and blasting. Additionally, the area within a ½ mile radius of Boar's Tusk would be closed to blasting and explosive charges (about 500 acres).

Lands within a ½ mile radius of the Crookston Ranch and the Boar's Tusk (590 acres) would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites. Protective rights-of-way would be issued to provide protection from mineral location for Crookston Ranch and recreation sites.

Off-road vehicle travel would be limited to existing roads and trails around these two sites, except for the road around Boar's Tusk which would be closed.



## ALTERNATIVES

Maximum fire suppression activity would be used to protect the standing historic structures at Crookston Ranch.

The Boar's Tusk and Crookston Ranch site would be unacceptable for surface mining activities and would be considered closed to any surface mining activity or any surface facilities.

### Monument Valley Area (64,300 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Monument Valley Area (64,300 acres) would be to continue to manage the area for multiple use and not as an ACEC or special management area, allowing development and public use with necessary consideration and protection of wildlife, raptors, cultural, watershed, scenic, and scientific values.

**MANAGEMENT ACTIONS:** The Monument Valley Area would not be designated an ACEC.

A portion of the Monument Valley area is within the Adobe Town Wilderness Study Area. Wilderness management, recommendations, and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The Wilderness Study Area acreage would not be identified for specific management unless the management is more stringent than either the Interim Management Policy or Wilderness Management.

The area would remain closed to mineral location, and the oil shale withdrawal would be retained.

The area would be open to: 1) development activities and public use with necessary consideration for wildlife, raptors, cultural, watershed, and scientific values (Table 2-10 and Table 2-21); 2) to consideration for further mineral leasing and development; and 3) to consideration for mineral material sales.

The standard requirements for the protection of paleontological resources would apply. The standard Section 106 process would apply for cultural resource management.

Surface disturbing activities including rights-of-way would be managed to avoid slopes greater than 25 percent and highly erosive areas unless a plan can be developed to mitigate adverse effects to the resource values. The remainder of the area would be restricted to activities, if appropriate, to provide protection of resource values.

ORVs would be limited to existing roads and trails. Visual resources would be managed for Class II and Class IV values. Activities in Class II areas all management actions would be designed and located to blend into the natural landscape and to not be visually apparent to the casual viewer (54,200 acres). Activities in Class IV areas could result in a major modification to the landscape (10,100 acres). No recreation sites would be developed nor any interpretive signing accomplished.

Wild horse and range related improvements would be allowed if in conformance with guidance for surface disturbing activities.

### Natural Corrals ACEC (1,275 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Natural Corrals ACEC would be to protect the cultural, historical, recreational, and geological values within the area. Other resource actions would comply with the objectives, including any restrictions required to protect the values of the ACEC.

**MANAGEMENT ACTIONS:** The Natural Corrals ACEC would be retained.

The entire ACEC would be open to consideration of oil and gas leasing.

The area would be closed to surface disturbing activities that could adversely affect ACEC resources (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (Table 2-21 and Table 2-5); and to mineral material sales.

All the area except 160 acres would be closed to surface coal mining activity and related facilities due to conflicts with raptor nests, sites on the National Register of Historic Places, and conflicts with crucial range for deer and elk. However, approximately 160 acres would be acceptable for surface mining and any related surface facilities (surface or subsurface mining) provided wildlife and floodplain impacts could be mitigated. This 160 acres would remain available for limited surface facilities related to subsurface mining.

The existing withdrawal would be retained, closing 357 acres to the location of mining claims (Table 2-6). The public water reserve withdrawal in section 12 would be revoked in the future since the land is now patented.

The 20-acre NRRP site would be closed to geophysical activities.

## ALTERNATIVES

The ACEC would be open to consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the resources. Activities would be designed to increase public awareness of the significance of the area.

The cultural and historical values of the NRHP site and the surrounding area within the ACEC would be protected by closing the area to surface disturbing activities that would adversely affect the cultural resources. Crucial winter range seasonal restrictions and raptor nesting restrictions would apply to disrupting activities.

The existing road/trail from the spring located in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$  of Section 18 and the designated archeological NRHP site (20 acres) would remain closed to off-road vehicle travel. The remainder of the area would be managed as limited to existing roads and trails for off-road vehicle travel. The ACEC would be open to over-the-snow vehicles.

Prescribed management actions for livestock grazing would include continuous monitoring, establishing riparian objectives, and obtaining cooperative riparian management. The wild horse herd management prescription would be continuous monitoring of wild horses.

In conformance with the ACEC objectives, the various recreational activities such as camping, picnicking, winter sports, hunting and fishing opportunities that occur in the area would be developed, maintained, preserved, or enhanced to provide for an optimum and satisfying visitor experience. Camping would be restricted to 14 days. A "Pack In-Pack Out" policy would apply for camping. Camping around the spring would be restricted. The area would be managed for Class IV visual resource values.

### Oregon Buttes ACEC (3,450 acres)

**MANAGEMENT OBJECTIVES:** The objectives for management of the Oregon Buttes ACEC would be to protect and manage the scenic integrity as a historic landmark. In addition, this ACEC would serve to protect the significant wildlife values that are found in the area.

**MANAGEMENT ACTIONS:** The Oregon Buttes ACEC would be retained.

A portion of the ACEC is within the boundaries of a WSA. Wilderness management, recommendations, and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The wilderness study area

acreage will not be identified for specific management unless the management is more stringent than either the Interim Management Policy or wilderness management.

The area would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-21 and Table 2-5); to mineral material sales for sand, gravel, or other types of construction or building materials; and to off-road vehicle travel, including those utilized for seismograph operations.

The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area. Seasonal restrictions for raptors and big game parturition areas would apply (Table 2-10).

The Oregon Buttes area would be managed under the prescriptions for VRM Class II values. Management actions would be designed to blend into the natural landscape and retain the existing character of the landscape.

### Pine Springs ACEC (90 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Pine Springs ACEC would be to enhance protection of cultural, historic, and prehistoric resource values.

**MANAGEMENT ACTIONS:** The Pine Springs ACEC would be retained.

The 90-acre area would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-21 and Table 2-5); to mineral location and the existing withdrawal would be retained (Table 2-6); to mineral material sales for sand, gravel, or other types of construction or building materials; to off-road vehicle travel; to all geophysical activities; and to explosive charges and blasting.

The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area; maintenance of the existing spring development; and additional spring developments if the action would be in conformance with cultural values.

The entire area would be managed for Class III VRM values, and management actions on the lands classified

## ALTERNATIVES

as VRM Class III lands would be designed to partially retain the existing character of the landscape.

### Red Desert Watershed Area (481,930 acres)

**MANAGEMENT OBJECTIVE:** The management objective for the Red Desert Watershed Area would be to manage the area (481,930 acres) for multiple use and not as a special management area. Resource prescriptions and objectives throughout this alternative would apply (Map 37).

**MANAGEMENT ACTIONS:** The boundary that would be considered the Red Desert Watershed Area would include the entire Great Divide Basin watershed area within the Green River planning area boundary. Resource prescriptions and objectives throughout this alternative would apply.

A portion of the Red Desert Watershed Area encompasses portions of six WSAs (Alkali Draw, Alkali Basin-East Sand Dunes, Honeycomb Buttes, Oregon Buttes, Red Lake, and South Pinnacles). Wilderness management recommendations and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The Resource Management Plan would not address wilderness recommendations or management prescriptions for the WSAs. The wilderness study area acreage would not be identified for specific management unless the management is more stringent than either the interim management policy or wilderness management.

The area would be managed to ensure developments and activities conform with the concepts of open space. The visual resource values of the area would be retained and site specific visual resource reviews (inventories) would be conducted prior to allowing activities that may affect these values.

Mineral exploration and development, surface disturbing activities, rights-of-way, and seismic activities would continue where acceptable subject to the management guidelines provided in the Minerals section. Approximately 2,500 acres would be closed to surface disturbing activities to protect candidate plant species and ACEC values in Oregon Buttes (Table 2-21). Seasonal restrictions for protection of raptors, big game crucial winter range, and calving/fawning areas would be managed as shown in Table 2-10. The exception criteria described in Appendix 7-1 would apply.

Approximately 46,735 acres could be developed for coal (see Coal Decisions). Most of the area would be open to consideration for salable and locatable miner-

als. The existing coal and stock driveway withdrawals would be retained.

Off-road vehicle travel would be managed to provide opportunities in conformance with other resource objectives. Approximately 93,000 acres would be closed to off-road vehicle travel; 248,060 acres would be limited to existing roads and trails. Opportunities for recreational activities would be maintained; however, no backcountry byways would be established.

Candidate plant species, cultural resource sites such as the South Pass Historic Landmark, ACEC values in Oregon Buttes, Greater Sand Dunes, and Cedar Canyon would be protected. Specific management prescriptions for those areas may be found in the particular special management area section of this document.

### South Pass Historic Landscape (87,580 acres)

**MANAGEMENT OBJECTIVES:** The management objective for the area would be to manage the area to protect the visual and historical integrity of geographic features and historic trails and surrounding viewscape.

**MANAGEMENT ACTIONS:** The 87,580-acre South Pass Historic Landscape area would not be designated an ACEC.

The South Pass Historic Landscape would encompass the viewshed along the Oregon and Mormon Pioneer trails and south of the trail to include the major landmark features of Oregon Buttes and Continental Peak (Map 37).

The area would be managed in conformance with cultural and historical objectives to protect historic values and visual resources. The scenic values of the Highway 28 visual corridor (3 linear miles) would be protected.

Within 1/4 mile or the visual horizon (whichever is less) of any contributing trail segment (about 8.5 miles) or within the South Pass Historic Landmark (5,260 acres) would be considered an avoidance area for surface disturbing activities; however, development activities such as roads, pipelines, and powerlines could be considered to cross trails in areas where previous disturbance has occurred and the trail has lost its National Register characteristics and would no longer be considered a contributing segment to a trail.

Vehicles used for geophysical exploration, or similar activities, could cross and drive down the historic trails,



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provided a site specific analysis determines that no adverse effects would occur. Geophysical activities up to 300 feet of the trails could be considered provided a site specific analysis determines that visual intrusions and adverse effects would not occur; however, actual geophysical activity such as vibroseis, explosives, blasting, or drilling could not occur directly on the trails.

About 46,160 acres of the area would be open to: 1) mineral leasing and development activities, subject to constraints to protect historic values; 2) activities that would conform with visual resource management classifications and prescriptions and consider the effects to visual resources; 3) geophysical activities (i.e., activities causing surface disturbance, vehicular travel, etc.) provided resource protection would be ensured; 4) the consideration of mineral material sales with restrictions to protect area values; and 5) mineral location. Off-road vehicle travel acres would be limited to existing roads and trails.

Management of the area included in three WSAs, the Oregon Buttes, Honeycomb Buttes, and White Horse Creek WSAs (41,400 acres in the southern portion of the area) is guided by the Interim Management Guidelines for Lands Under Wilderness Review. Wilderness management would not be addressed unless management of the area is more stringent than either the interim management policy or wilderness policy. This part of the area would be closed to motorized vehicle travel, including over-the-snow-vehicles, to maintain the unique naturalness, solitude, and primitive and unconfined recreational opportunities. This portion would remain closed to oil and gas leasing (Table 2-21), mining claims, and geophysical activities.

No visible disturbance would occur within the boundary of the South Pass Historic Landmark (the actual South Pass geographic location, about 5,260 acres) and activities would be managed to avoid this area. The actual boundaries would be determined during activity planning. Off-road vehicle travel would be limited to existing roads and trails.

Activities would conform with the requirements of VRM Class II values and all management actions would be designed and located to blend into the natural landscape and to not be visually apparent to the casual viewer.

The exact boundaries of the landscape would be determined during activity planning.

The Oregon Buttes ACEC would be retained as an ACEC (see the section on the Oregon Buttes ACEC).

### Steamboat Mountain Area (43,010 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Steamboat Mountain Area would be to provide suitable habitat to maintain the continued existence of the Steamboat elk herd (Map 37).

**MANAGEMENT ACTIONS:** The Steamboat Mountain Area would not be designated as an ACEC.

The area would be open to oil and gas leasing, mineral material sales, mineral location and development, rights of way, and other surface disturbing activities with a plan of development to assure no undue degradation would occur to the elk herd. Surface disturbing activities, (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) geophysical activities, would be restricted seasonally on crucial big game winter ranges and birthing areas (Table 2-21 and Table 2-5). Exception from this restriction may be approved if conditions described in Appendix 7-1) apply.

Approximately 11,000 acres of the existing KCRRA area occurs within the Steamboat Mountain area, however, recommendations for coal leasing activities would not occur. All existing and proposed above ground facilities would be landscaped or painted to harmonize with the natural landscape.

Off-road vehicle travel would be limited to existing roads and trails. The May 1-July 1 seasonal closure for off-road vehicle travel currently in effect would still apply.

The area would be managed for Class III visual values. Management actions on the lands classified as VRM Class III would be designed to partially retain the existing character of the landscape.

Geological and ecological features would be managed for multiple uses.

Vegetation management would be designed to maintain big game forage and cover requirements. Fire activities would be designed to meet these objectives. Sales of forest products would be limited to activities designed to control insects and disease. Dead standing trees would be managed under the "Animal Inn" program to help maintain biological diversity. Reforestation and reforestation within the proposed ACEC would be done with native species.

An area of overlapping elk crucial wintering and parturition areas (30,000 acres) outside and adjacent to the Steamboat Mountain area but within the elk herd unit

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boundary (Map 37) would be managed to allow for progressive development of one or two areas at a time. Satisfactory abandonment and reclamation of an area or field would be required prior to developing another area.

### Tri-State Monument Area (131,780 acres)

The Tri-State Monument area would consist of the Currant Creek/Sage Creek watersheds and the existing Red Creek ACEC.

**MANAGEMENT OBJECTIVE:** The management objective of the Tri-State area would be to maintain watershed values.

**MANAGEMENT ACTIONS:** The Tri-State Monument Area would not be designated an ACEC. The Currant Creek/Sage Creek watersheds would not be designated an ACEC for Colorado River cutthroat trout and watershed values. The existing Red Creek ACEC would be retained (55,880 acres).

#### General Area

The actions listed under this general heading apply to all portions of the Tri-State Monument Area unless otherwise noted.

The area would be open to consideration of mineral leasing and mineral material sales, subject to the surface use restrictions. Those areas currently not under a withdrawal would be open to mineral location.

The area would be open to surface disturbing activities provided a plan could be developed to mitigate affects to watershed and water quality values, slopes, wintering wildlife, parturition areas, sage grouse, and raptors (Table 2-21 and Table 2-10). Exception from the wildlife seasonal restrictions may be approved if conditions described in Appendix 7-1 apply.

The area would be open for consideration of activities such as fencing, interpretive signs, barriers, or sediment structures to meet resource objectives.

Approximately 5,700 acres of the existing KRCRA area occur within the Tri-State area; however, recommendations for coal leasing activities would not occur.

Camping would be allowed within 200 feet of water if it would be determined that no damage to watershed, water quality, and fisheries values would occur.

Off-road vehicle travel would be limited to existing roads and trails.

Fire suppression would be limited to containment at ridgetops around Currant Creek. Firefighting equipment would be limited to existing roads and trails. Heavy equipment would not operate in areas closed to surface disturbing activities (23,740 acres). Fires in timber stands would be suppressed immediately.

Vegetation treatments would conform with livestock grazing, watershed, wildlife, and fisheries objectives. The inner gorge of intermittent and ephemeral drainages would be treated in such a manner as to leave mosaic patterns or untreated areas of vegetation. No more than 50 percent of the cover in the inner gorge area may be treated.

### Currant Creek Portion (23,740 acres)

**MANAGEMENT OBJECTIVE:** The Currant Creek drainage would be managed to maintain the existing habitat for Colorado River cutthroat trout.

**MANAGEMENT ACTIONS:** The area would not be designated as part of the Tri-State Monument ACEC.

The Currant Creek Drainage (23,740 acres) would be closed to surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (Table 2-21). It would be an avoidance area for rights-of-way (Table 2-5). The area would be closed to sodium prospecting (Table 2-11).

The drainage would be open for those management actions or facilities that would facilitate management of the area.

Off-road vehicle travel on 23,740 acres would be limited to existing roads and trails.

### Sage Creek Portion

**MANAGEMENT OBJECTIVES:** The Sage Creek watershed would be managed to maintain the watershed values.

**MANAGEMENT ACTIONS:** The Sage Creek Watershed (52,670 acres) would not be designated as part of the Tri-State Monument ACEC.

The drainage would not be an avoidance area for rights-of-way (Table 2-5).

Off-road vehicle travel would be limited to existing roads and trails.

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### Red Creek ACEC (55,880 acres)

**MANAGEMENT OBJECTIVES:** The objectives for management of the ACEC would be to 1) reduce the amount of sediment currently being delivered to the Green River as a result of sheet and rill erosion, gully, and channel erosion occurring in the Red Creek area, 2) improve aquatic habitat conditions along the Green River in Utah below Red Creek, 3) reduce gully and channel erosion where roads and water tables are threatened, and 4) increase vegetative production in the Red Creek Watershed for wildlife and domestic livestock.

**MANAGEMENT ACTIONS:** The existing Red Creek ACEC would be retained (55,880 acres).

A portion of the Red Creek ACEC is within the Red Creek Wilderness Study Area (8,020 acres). Wilderness management recommendations and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The wilderness study area acreage will not be identified for specific management unless the management is more stringent than either the Interim Management Policy or wilderness management.

The 8,020 acres of the ACEC would be closed to motorized vehicle travel, including over-the snow-vehicles to maintain the unique naturalness, solitude, and primitive and unconfined recreational opportunities.

This portion would remain closed to oil and gas leasing (Table 2-21), mining claims, and geophysical activities.

The remaining acreage in the watershed would be managed as an avoidance area for linear and surface disturbing rights-of-way and surface disturbing activities. Activities could occur, however, provided a plan could be developed to mitigate affects to watershed and water quality values, wildlife, scenic, and fisheries values (Table 2-21; Table 2-10; and Table 2-5).

The remaining area would be open to consideration of mineral leasing and mineral material sales, subject to the surface use restrictions referenced above. Those areas currently not under a withdrawal would be open to mineral location.

Livestock grazing objectives would be re-evaluated and where necessary modified to meet watershed, water quality, and riparian objectives. Riparian areas would be improved to proper functioning condition. Grazing systems would be designed to provide rest and/or deferment and optimum desired plant cover.

Off-road vehicle use would be limited to existing roads and trails.

### White Mountain Petroglyphs ACEC (20 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the White Mountain Petroglyphs ACEC would be to protect cultural resource values from degradation and provide for wildlife and scenic values and Native American concerns. Public awareness and use of the area as an educational site would be encouraged.

**MANAGEMENT ACTIONS:** The White Mountain Petroglyphs ACEC would be retained.

The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

The ACEC would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-21 and Table 2-5); to the location of mining claims (and the existing withdrawal retained); to mineral material sales for sand, gravel, or other types of construction or building materials; and to the use of fire retardant chemicals containing dyes.

Off-road vehicle travel, including those used for geophysical exploration and fire suppression activities, would be limited to existing roads and trails, (Table 2-23).

The ACEC would be managed for Class IV visual resource values. Management actions on the lands classified as VRM Class IV lands could result in a major modification to the landscape.

Human activity, recreation use, etc., would be restricted from February 1 through July 31 to protect nesting raptors. Exception from this restriction may be approved if conditions described in Appendix 7-1 apply.

### Wild and Scenic Rivers Management

**MANAGEMENT OBJECTIVE:** The objective for management of rivers would be to manage the Sweetwater and Green Rivers for recreation uses and not under the prescriptions of wild and scenic river management.

**MANAGEMENT ACTIONS:** BLM-administered lands along the Green River would be managed as a special recreation management area. A management plan for

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the Green River would be prepared to enhance recreation management. Coordinate with BOR and USFWS. Support the establishment of a greenbelt.

Temporary cultural and paleontology activities (e.g., recordation, sampling, testing, stabilization, rehabilitation, and reconstruction) may be permitted to the extent that no permanent impacts occur to river-related values.

Fires would be suppressed by "light-on-the-land" techniques. No mechanized equipment would be used off of existing roads to suppress fires. Chainsaws and helicopter bucket drops may be allowed if no permanent impacts occur to recreation river values.

Timber harvesting would be allowed within the 500-foot corridor subject to surface disturbance restrictions.

Livestock grazing would continue at current levels unless monitoring indicated a modification would be appropriate. Range improvements would be permitted subject to the surface disturbance constraints and recreation guidelines.

Lands disposals or exchanges could occur if they meet the criteria (Appendix 8-2). Approximately 640 acres would be considered for acquisition along the Big Sandy River (Appendix 8-3).

Minerals leasing would be allowed with constraints to protect water quality, riparian wetlands, and floodplains.

Mining claims would be allowed; regulations outlined in 43 CFR 3809 would apply.

Geophysical activities would be allowed, including vehicles subject to the same constraints as mineral leasing to protect water quality and riparian wetlands and floodplains.

No surface disturbance would be allowed within 500 feet of the rivers and associated 100-year floodplains, riparian, and wetland areas without an approved plan to mitigate impacts to water quality, riparian and recreation values, and fisheries. No new permanent facilities would be allowed in the floodplains, but linear crossings would be considered with proper mitigation to protect water quality, riparian and recreation values, and fisheries. Seasonal restrictions would be applied when necessary to protect game fish populations during spawning.

Vegetative buffer strips would be maintained between developed recreational facilities and live water.

Recreation uses would be allowed so long as resource damage does not occur. Floatable stream stretches would be managed so that there would be no more than a 10 percent increase in fecal coliform count.

Recreation area management plans would be prepared for the Sweetwater, Big Sandy, and Green Rivers to provide direction for recreation uses, and protection of recreation, water quality, and scenic values.

A 14-day camping limit would apply to all areas. Currently developed campgrounds along the Sweetwater River would be managed to promote camping opportunities.

Riparian areas would be managed to maintain, improve, or restore riparian values.

Vegetation treatments would be allowed within 100 feet of these streams if in conformance with area objectives.

Cottonwoods would not be suitable for treatment or removal.

Class II visual management prescriptions would apply.

Water impoundments and diversions would be permitted with proper authorization (404 permit).

Alternative water supplies or facilities would be provided for livestock to relieve grazing pressure along stream bottoms.

Wildlife habitat improvements could be allowed after site specific analysis.

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This alternative allows for maximizing resources such as mineral development (fluid, solid, salable, and locatable), livestock grazing, developed recreation sites, and timber harvesting. Wildlife habitat, recreation quality, and wild horse herd numbers would be limited. Public lands would be made available primarily for use and development. Resource values would, however, still be protected to the extent required by applicable laws, regulations, and Executive Orders.

## Air Quality Management

**MANAGEMENT OBJECTIVE:** The objectives for management of air quality would be to maintain and



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where possible enhance present air quality management levels; to protect public health and safety and sensitive natural resources; and within the scope of BLM's authority, minimize emissions which may add to acid rain, cause violations of air quality standards, or reduce visibility.

**MANAGEMENT ACTIONS:** Data would be collected and special requirements applied on a case-by-case basis to alleviate air quality problems.

Plant facilities would be located where they would not significantly degrade air quality over the planning area, particularly the Flaming Gorge National Recreation Area; or cause heavy fog conditions that would be hazardous to public health, such as black icing of major highways, or such as extreme and continual fog that could inhibit transportation or recreation activities.

Minimal restrictions would be placed on product shipment.

BLM would coordinate with DEQ and EPA on air quality standards and regulations. BLM would cooperate with Wyoming DEQ on review of air quality regulations which could impact BLM-managed activities.

Surface disturbing activities would be managed to not violate air quality regulations (Appendix 5-2).

Dust control on unimproved dirt roads would be minimal.

See other resource management prescriptions in this document for other restrictions that may apply to air quality management activities.

### Candidate Plant Species Management

**MANAGEMENT OBJECTIVES:** The objectives for management of plant species that are candidates for listing as threatened or endangered would be to prevent destruction or loss of the plant species communities and important habitat and to provide opportunities for enhancing or expanding the habitat.

**MANAGEMENT ACTIONS:** Known locations of candidate plant species communities (44 locations, about 3,110 acres, see Map 4) would be closed to: 1) surface disturbing activities that could adversely affect the candidate plant species and their habitat (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see discussions in Lands and Realty Management and

Minerals Management); 2) to mineral material sales; 3) to off-road vehicular travel including those used for geophysical exploration activities; and 4) to surface mining activities and facilities associated with leasable minerals.

The known plant locations would be open to the location of mining claims (withdrawal from mineral location would not be pursued) and oil and gas leasing.

Management would require geophysical activities to avoid these sites. Fire suppression activities would be limited to existing roads and trails.

Any federally controlled management actions on potential habitat of candidate plant species communities on federal surface and private surface/federal minerals (about 39,320 acres) would require searches for the plant species prior to projects and activities. These areas would be closed to activities that could adversely affect the plant species and habitat, where candidate plants and important habitat are located; would limit off-road vehicle travel to designated roads and trails; and would be closed to fire suppression other than use of existing roads and trails.

Fencing, interpretive signs, or barriers to ensure protection to the plant species would be allowed in potential habitat areas.

See other resource management prescriptions in this document for other restrictions that may apply to candidate plant species management activities.

### Cultural, Natural History, and Paleontological Resource Management

**MANAGEMENT OBJECTIVES:** The objectives for management of the cultural resources would be to: (1) expand the opportunities for scientific study, and educational and interpretive uses of cultural and paleontological resources; (2) protect and preserve the most important cultural and paleontological resources for future generations; and (3) resolve conflicts between cultural/paleontological resources and other resource uses. Of particular concern would be significant sites of historic or prehistoric human habitation, sites demonstrating unique ethnic affiliation and places having special spiritual or religious significance to Native Americans. Same as Preferred.

**MANAGEMENT ACTIONS:** Sites listed on the National Register of Historic Places (NRHP) and NRHP

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eligible sites would be managed for their local and national significance, under the guidelines of the National Historic Preservation Act (especially sections 106 and 110) (Appendix 6-1), the Archeological Resources Protection Act (ARPA), and the American Indians Religious Freedom Act (AIRFA) (Appendix 6-2) and to ensure unavoidable adverse effects would be properly mitigated prior to disturbance or destruction.

Appropriate level of analysis of all BLM undertakings would be conducted to determine National Register of Historic Places eligibility and potential effects to those historic properties in the area of potential effect in accordance with the National Historic Preservation Act (Appendix 6-1).

### Historic Trails

Management of the Oregon and Mormon Pioneer National Historic Trails and the Pony Express and California historic trails would provide cooperation with the National Park Service in implementation of the Comprehensive Historic Trails Management Plan for the Oregon and Mormon Pioneer National Historic Trails. Within ¼ mile or the visual horizon (whichever is less) of any contributing segment (233 miles, 74,560 acres) would be an avoidance area for surface disturbing activities (Map 5); however, development activities such as roads, pipelines, and powerlines could be considered to cross trails in areas where previous disturbance has occurred and the trail has lost its National Register characteristics and would no longer be considered a contributing segment to a trail.

Vehicles used for geophysical explorations, or similar activities, could cross and drive down the trails, provided a site specific analysis determines that no adverse effects would occur. Geophysical activities up to 300 feet from the trails could be considered provided a site specific analysis determines that visual intrusions and adverse effects would not occur; however, actual geophysical activity such as vibroseis, explosives, blasting, or drilling could not occur directly on the trails.

Management of historic roads and trails that are eligible for the NRHP but are not Congressionally designated historic trails such as the Overland Trail, the Cherokee Trail, and the Point of Rocks to South Pass Road (about 170 miles, 54,400 acres) would be recommended for listing to the National Register of Historic Places. Management prescriptions would generally be the same as those for designated trails.

Various Expansion Era (i.e., 1870-1940) trails (15 trails and approximately 800 miles) would be managed

according to their historical context. Expansion Era trails are those routes developed after establishment of the Transcontinental Railroad in Wyoming in 1869. Management actions would include development of activity plans with the objective of preserving significant contributing segments (estimated at not more than 10 miles of each of the 15 trails, about 150 miles) in their natural condition and would apply the same management prescriptions applied to NRHP eligible historic trails.

Big Sandy Station, Big Timber Station, Freighters Springs Station, Camp Carmichael, Lander's Camp, and site of Simpsons's Gulch wagon train burning would be managed for preservation of historical values. Management strategy would be developed for these sites and Cultural Resource Management Plans would be prepared if appropriate.

Archeological resources in the Little Colorado Desert, North Nitchie Gulch, and Wamsutter Arch concentrated oil and gas areas (that may be eligible for the NRHP under Criterion D) would be managed by synthesizing existing data with the objective of facilitating surface disturbing activities without sacrificing significant archeological values. A programmatic memorandum of agreement would be negotiated with the SHPO and ACHP to achieve this objective. Historic resources that could be eligible under NRHP criterion (36 CFR 60 and Appendix 6-1) would not be managed according to this prescription.

Surface disturbing activities in playa lake areas (Blue Forest, 24,640 acres; Blue Point, 3,200 acres; and Adobe Town Rim, 1,280 acres) would be managed by developing programmatic memoranda of agreement for data recovery with the SHPO and ACHP. Each playa would be managed as an NRHP eligible historic district.

### Rock Art Sites

Three rock art sites (approximately 60 acres) would be open to surface disturbing activities with an approved plan to mitigate impacts on within the context of standard 106 compliance (Sugarloaf Petroglyphs, Tolar Petroglyphs, and LaBarge Bluffs Petroglyphs). The Sugarloaf Petroglyphs would retain the existing withdrawal from mineral location and be closed to the location of mining claims (5 acres). The sites would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

Three rock art sites would be closed to off-road vehicular travel (LaBarge Bluffs, Sugarloaf, Tolar, 60 acres) including those used for geophysical exploration

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activities. Off-road vehicular travel would be limited to existing roads and trails on 2 sites (White Mountain and Cedar Canyon, 40 acres) (see Off-Road Vehicle Management), and use of fire retardant chemicals containing dyes would not be allowed.

White Mountain Petroglyphs (20 acres) and Cedar Canyon Petroglyphs (20 acres) would be closed to surface disturbing activities that could adversely affect the rock art sites (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see Lands and Realty Management and Minerals Management); would retain withdrawals from mineral location and be closed to the location of mining claims for White Mountain Petroglyphs (20 acres); would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the petroglyph sites; and use of fire retardant chemicals containing dyes would not be allowed.

No specific prescriptions would apply to the area within ½ mile radius of the 5 rock art sites.

### Other Sites

The LaCiede Stage Station and Dug Springs Stage Station would be closed to surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; mineral material sales, etc.).

Dug Springs (10 acres) and LaCiede Stage Stations (10 acres) would be open to exploration and development of locatable minerals. Cultural resource management plans would be written for each site.

The Pine Springs site would be closed to surface disturbing activities that could adversely affect the site (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see Lands and Realty Management and Minerals Management); the 90-acre withdrawal in Pine Springs would be retained. Cultural resource management plans would be written for each site.

Human burial sites would be managed according to provisions of Section 106 of NHPA data recovery could be an acceptable mitigation measure, except in the case of Native American burials when provisions of the Native American Graves Protection Repatriation Act would prevail. Native American burial sites would take into account recommendations from appropriate tribes. These areas (about 2 acres) would be closed to surface disturbing activities that could adversely affect them and

to mineral material sales (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; mineral material sales; etc.) (see Lands and Realty Management and Minerals Management).

The 40-acre withdrawal to protect the Parting-of-the-Ways historic site would not be renewed. Development activities such as roads, pipelines, and powerlines would be allowed to cross the site in areas where previous disturbance has occurred, and where the trail and site has lost its National Register characteristics (Map 5).

The aboriginal quarry site (160 acres) would be protected by closing the site to surface disturbing activities that could adversely affect the site (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; mineral material sales; etc.) (see Lands and Realty Management and Minerals Management). No withdrawal would be pursued.

Surface disturbing activities would be allowed on Dry Sandy Swales (1 mile, 20 acres) if a site specific analysis determines that adverse affects would not occur. Prescriptions and criteria for the management of historic trails would apply.

North and South Table Mountains (1,280 acres) would be managed to preserve cultural information within standard Section 106 compliance. Activities could take place provided a site specific analysis determines that adverse affects to cultural resources would not occur.

Consultation with appropriate Native American groups concerning areas of concern for spiritual and religious purposes would occur in accordance with the American Indian Religious Freedom Act.

Interpretive materials which describe the cultural resources of the area, their significance, and the bureau's responsibility toward these resources would be prepared. Historical aspects of all programs would be interpreted for public appreciation and enjoyment as appropriate.

Exchanges for acquisitions for approximately 40 acres and cooperative agreements would be pursued to enhance management of cultural resources.

Collecting of fossils may be allowed with a permit that may be issued only to an academic, scientific, governmental, or other qualified institution, individual, or consultant. Collection of common invertebrate fossils and petrified wood for hobby purposes may be allowed on



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public lands and is regulated under 43 CFR 3600, 3622, and 8365.

Surface disturbance activities that affect fossil locations would be mitigated and inventories would be required. Surveys may be required on areas with potential for fossils, including outcrops of the Bridger and Washakie Formations, and the lowermost 100 feet of the Laney Member.

Geological and ecological features of Steamboat Mountain and Boar's Tusk-Killpecker Sand Dunes areas would be managed for other resource values (see the Special Management Area section for the Greater Sand Dunes ACEC and Steamboat Mountain Area).

See other resource management prescriptions in this document for other restrictions that may apply to cultural, natural history, and paleontological resource management activities.

### Fire Management

**MANAGEMENT OBJECTIVE:** The objectives for fire management would be to use prescribed fire to meet resource management objectives (such as improvement of wildlife habitat and range condition), and to suppress wildfires for the protection of resource values, property, and human life.

**MANAGEMENT ACTION:** Fire management activities would meet resource management objectives, protect sensitive resources and property, and promote public health and safety.

Fire suppression would be provided commensurate with resource values. Fire strategies would include confinement, containment, and control (see Glossary). Figure 2 shows the decision-making process used when dealing with fire.

Heavy equipment would not be used to suppress fire in the Pine Springs Expansion Area or in the aboriginal quarry site.

Fires around populated areas, Hickey Mountain, Pine Mountain, Little Mountain, Steamboat Mountain conifer communities, and the structures at Crookston Ranch would receive immediate suppression efforts.

Fire retardants and chemicals would not be utilized in rock art sites. Suppression activities would be designed to protect fisheries, candidate plant areas, and other special management areas.

The sensitive cultural and historic sites would be closed to fire suppression activities other than use of existing roads and trails.

Timber stands (conifer) would be managed under the guidelines of full suppression (contain, confine, control) for wildfires.

Prescribed fire by both planned and unplanned ignition would be used as a resource management tool. Activity plans would be prepared to address specific applications in accordance with resource objectives.

Prescribed burning would be conducted so that ambient air quality standards would not be violated.

Aspen and woodland juniper would be available for consideration of a prescribed fire condition.

See other resource management prescriptions in this document for other restrictions that may apply to fire management activities.

### Forest Resource Management

**MANAGEMENT OBJECTIVES:** The objective for management of commercial forest lands would be to optimize sawlog, fuelwood, and post and pole production.

**MANAGEMENT ACTIONS:** The planning area has been broken into 4 timber compartments for timber management: Wind River Front, Pine Mountain, Little Mountain, and Hickey Mountain-Table Mountain. Hickey Mountain-Table Mountain would be managed under the woodland prescriptions described in this alternative.

All forested lands would be managed under a category of intensive management to improve the health, vigor, and diversity of forest stands while giving consideration to other resource values. Based upon the commercial forest land base and allowable harvest calculations, the Green River planning area could sustain a sawtimber harvest level of 1,000,000 board feet annually from approximately 7,943 acres (Table 2-3).

Both commercial and noncommercial forest lands would provide the local demand for minor forest products (e.g., fuelwood, posts and poles, wildlings, and Christmas trees).

The major consideration in management would be to provide vegetative material for harvesting. Stand conditions and management considerations would dictate harvest methods and size and shape of units.

## ALTERNATIVES

Cutting methods could include clearcutting, individual tree marking, shelter wood, thinning, and group selection. Clearcutting would be the primary harvest method and units would not generally exceed 25 acres in size. Clearcut unit size and shape would be designed to maximize natural regeneration and edge effect for wildlife.

Buffers along drainages would not be applied to timber harvesting activities (e.g., tree cutting and skidding). No surface disturbance (i.e., road construction) would be allowed on 247 acres within 500 feet of or in 100-year floodplains, wetlands, or perennial streams. No surface disturbance would be allowed within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages, without an approved plan to mitigate impacts to water quality. Linear crossings would be considered on a case-by-case basis. Seasonal constraints for big game and sage grouse would not apply to harvest activities.

Stand replacement of harvested areas or areas denuded by natural causes would be revegetated with tree seedlings within prescribed time periods of 5 to 15 years (fully stocked).

Woodland forest would be managed to emphasize forest products and forest management activity, and in some areas with restrictions to accommodate other resource values. Woodland forests consist of juniper, aspen, and limber pine (127,977 acres). Woodland forests would be managed similar to commercial forests while providing for public uses including recreation and woodland product harvest.

Woodland forest would receive silvicultural treatment which would promote the viability of these stands. These treatments may include thinning, harvesting, chaining, and burning. The vegetative material resulting from these treatments would normally be sold as public demand sales.

Woodland forest acreage would be maintained and no treatment would be implemented that converts the areas to another vegetation type. Old aspen stands may be replaced by stands of sprouting aspen by various treatment (e.g., burning, etc.).

Commercial forest would be managed under the category of restricted management. Forest products would be harvested from the entire commercial forest base (7,943 acres). Priority harvest would be given to mature, decadent, and diseased trees.

All commercial conifer areas would be managed under full fire suppression. Exceptions would be pre-

scribed burns of slash piles after logging and burning aspen stands primarily to improve livestock management. Firewood cutting within and adjacent to campgrounds would be allowed.

Cottonwood trees would not be available for harvesting.

See other resource management prescriptions in this document for other restrictions that may apply to forest resource management activities.

## Hazardous Materials and Other Hazards

**MANAGEMENT OBJECTIVES:** The objectives for management of hazardous materials and waste would be to: 1) protect public and environmental health and safety on BLM-administered public lands, 2) comply with applicable federal and state laws, 3) prevent waste contamination due to any BLM-authorized actions, 4) minimize federal exposure to the liabilities associated with waste management on public lands, and 5) integrate hazardous materials and waste management policies and controls into all BLM programs.

**MANAGEMENT ACTIONS:** For BLM-authorized activities that involve hazardous materials or their use, precautionary measures would be used to guard against releases or spills into the environment.

Sale or transfer of public lands on which storage or disposal of hazardous substances has been known to occur would require public notification of the type and quantity of such substances.

BLM-administered public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations and contingency plans. Parties responsible for contamination would be liable for cleanup and resource damage costs, as prescribed in federal and state regulations. If at all possible, the responsible parties would bear the financial burden of cleanup and resource damage costs.

Any produced water pit or drilling fluid pit that shows indications of containing hazardous wastes would be tested for the TCLP constituents and if analysis proves positive, the fluids would be disposed of properly. The costs of testing and disposal would be the responsibility of the operator.

If hazards should be identified, the BLM will provide appropriate warnings and establish precautions for safety

## ALTERNATIVES

hazards associated with the use of any areas on any areas on BLM-administered public lands.

See other resource management prescriptions in this document for other restrictions that may apply to hazardous materials management activities.

### Lands and Realty Management

**MANAGEMENT OBJECTIVES:** The objectives for management of the land and realty program would be to manage the public lands to support the goals and objectives of other resource programs, to respond to public demand for land use authorizations, and to acquire administrative and public access where necessary.

**MANAGEMENT ACTIONS:** The lands and realty management actions are divided into five groups.

#### Land Ownership Adjustment

Public lands which have future potential for disposal have been identified in Appendix 8-1 (13,043 acres). The disposal of these lands may allow for the acquisition of important resource lands or meet other important public objectives such as community expansion and economic development. Priority would be given to land exchanges. All lands identified for possible disposal would be added to the BLM/State Master Exchange file (Map 7).

Tracts of land along Interstate Highway 80 interchanges would be considered as available for disposal assuming no other resource values would preclude such action.

Sweetwater County School District No. 1 would be given the opportunity to acquire Lots 3,4,5, section 28, T. 19 N., R. 10 W. (124 acres) for school purposes prior to any other type of disposal.

Action would be taken to acquire lands (about 31,020 acres) by purchase/exchange or through cooperative agreement to support resource needs (Appendix 8-3) for lands of interest. Lands would include private/State lands along upper stream reaches of the Big Sandy River; State inholdings in WSAs; other lands with important resource values. In those instances where a purchase or exchange would not be feasible, cooperative agreements would be proposed to protect cultural/historic sites; threatened and endangered species habitat; and riparian habitat.

### Utility/Transportation Systems

Public lands would be made available throughout the planning area for rights-of-way, permits, and leases. The planning area, with the exception of defined avoidance and exclusion areas, would be open to the granting of rights-of-way (reference ACEC and other special management area alternatives).

The ROD and *Federal Register* Notice for the RMP would meet the criteria for public notification for linear or site rights-of-way as required by BLM Manual 7221. Site facilities or major linear rights-of-way along perennial streams which require an EIS would receive prior public notice unless such notice was given by another government agency (federal, state, or local).

The Aspen Mountain Communications Site Plan would govern development of sites at this location. Sites at other locations would be approved on a case-by-case basis. Sites would be shared where possible.

Major transportation and utility line rights-of-way would be confined to established concentration areas. Areas designated as utility windows, ROW concentration areas, and existing communication sites would be preferred locations for future grants (Map 8).

Right-of-way corridors would not be designated due to the predominate checkerboard private land pattern in the planning unit.

Windows ½ mile in width have been identified for the placement of utilities. The northern east-west window would be for underground facilities only. A ½ mile wide north-south window on the west side of Flaming Gorge has been identified for above and below ground utilities.

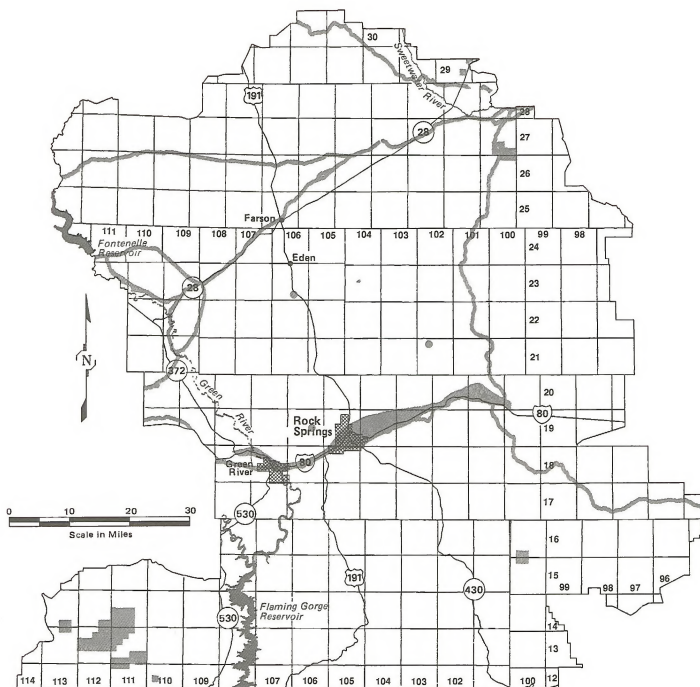
Rights-of-way and avoidance areas are described in Table 2-4, Table 2-5, Map 38, and Map 39.

An avoidance area for major utility lines would be located along I-80 between Point of Rocks and Green River. Due to topography, congestion in the concentration area, and surface mining, this area would be restricted to local distribution service lines.

### Withdrawals/Classifications

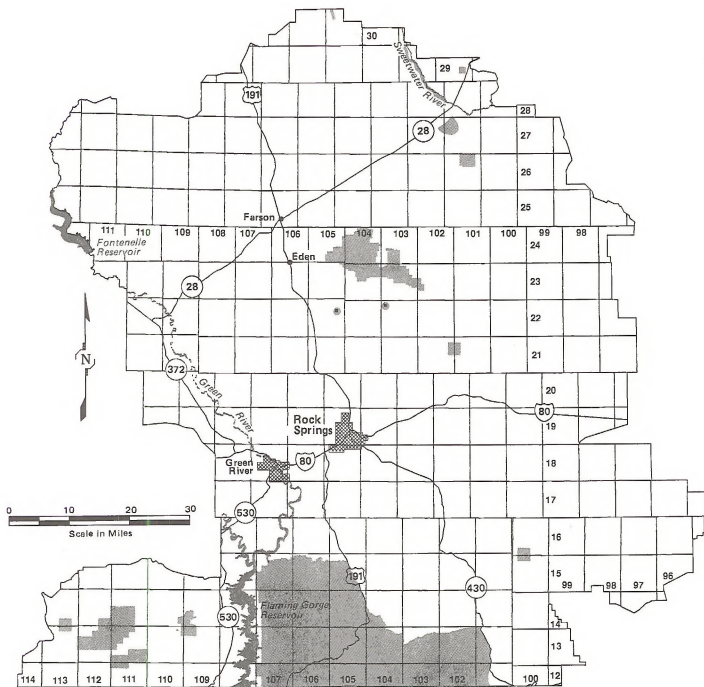
Additional withdrawals may be obtained to protect important resource values (Table 2-6).

The Multiple Use Management Classification would be revoked, as it affects public lands within the planning area (200 acres).



 Avoidance Area

**Map 38**  
**Alternative B**  
**Rights-of-Way Exclusion**  
**and Avoidance Areas**  
**Green River Planning Area**



- Avoidance Area
- Exclusion Area

**Map 39**  
**Alternative B**  
**ROW Avoidance or Exclusion Areas in**  
**Special Management Areas**  
**Green River Planning Area**



## ALTERNATIVES

Withdrawals would be revoked if they no longer serve the purpose for which they were withdrawn (Map 11; Map 12; and Table 2-7). Prior to revocation, withdrawn lands would be reviewed to determine if any other resource values require withdrawal protection.

Public Water Reserves would be terminated where no longer needed, and acquired where the need exists (21,368 canceled and 9,386 acquired acres).

Issue rights-of-way or rely on protection under 43 CFR 3809 for special management areas or lands within ACECs such as Monument Valley, Tri-State Monument, and Pine Springs Expansion Area proposed ACECs; rock art sites; LaCiede Stage Station; Dug Springs Stage Station, and T&E plant sites.

### Desert Land Entries

All public land in the planning area would be considered unsuitable for and closed to desert land entry and agricultural leases. In the event that an applicant can provide evidence of a water right and provide an acceptable conservation plan which protects the soil resource and prevents salinity, the application for either a DLE or for an agricultural lease would be considered on its merits. Desert Land Entries and agricultural leases must meet the criteria outlined in Appendix 8-2).

### Access

Access to public lands would be provided throughout the planning area. Access to areas would be closed, where necessary, to protect significant resource values.

Easements would be acquired to provide access to public lands for recreational, wildlife, range, cultural/historical, mineral, ACEC, special management area, and other resource needs (Table 2-8).

Placement of advertising signs on public lands adjacent to county roads, or roads included in the BLM Transportation Plan, would not be required to meet the criteria for sign placement on federal or state highways.

See other resource management prescriptions in this document for other restrictions that may apply to lands and realty management activities.

### Livestock Grazing Management

**MANAGEMENT OBJECTIVE:** The objective for livestock grazing management would be to improve forage production and ecological conditions for the benefit of

livestock use primarily, and where possible for wildlife habitat, watershed, and riparian areas.

**MANAGEMENT ACTIONS:** The current active grazing preference (318,647 AUMs) would be maintained or increased through implementation of AMPs, construction of range improvement projects, and vegetation manipulation.

Livestock grazing would be authorized in the 970-acre Palmer Draw area and would be managed under an allotment management plan. Authorized grazing preference may be reduced in areas with excessive soil erosion and poor range condition. All developed and semi-developed recreation sites and special management areas would be open to livestock grazing.

The present allotment boundaries and management prescriptions would continue in the Rock Springs Allotment.

AMP development and grazing system/range improvement implementation for "I" and "M" categories would be the same as described for the Preferred Alternative.

The current authorized active livestock use and existing forage reservations for wildlife and wild horses would be maintained. Existing rangeland monitoring would continue and additional rangeland monitoring would be initiated to determine the need for forage allocation adjustment.

Unallotted forage on public land (15,100 acres) scattered throughout the planning area would be allocated on a case-by-case basis. The number of AUMs to be allocated would be determined after the lands have been evaluated. Forage increases would be allocated to livestock as first priority.

Fifty percent of riparian areas would achieve a proper functioning condition, or better in ten years. Riparian areas would be managed to emphasize livestock forage.

Salt blocks for livestock would not be placed within 100 feet of live water, wetlands, or riparian areas, unless analysis shows that it would be acceptable.

Vegetation treatment (mechanical, chemical, fire) would be designed to increase livestock forage by removing decadent stands of brush in specific areas (approximately 290,000 acres). Prescribed fire would be the preferred method of vegetation manipulation. Chemical treatment would be used only where national guidelines can be exercised to prevent unwanted de-

## ALTERNATIVES

struction of desirable fauna or flora and to prevent transportation of these chemicals to other areas by water or air movement (Appendix 9-5). Noxious weed control would be the same as described for the Preferred Alternative.

Water sources would be developed in wildlife crucial winter range as necessary and would be constructed primarily for livestock use.

Fence construction in big game use areas and known migration routes would require site specific analysis. All constructed fences would follow construction standards and design (BLM Manual 1740) and would be located and designed to not impede wild horse movement. All fences where documented wildlife conflicts occur would be removed, reconstructed, or modified to BLM standards (approximately 43 miles). Construction of approximately 27 miles of fence would be considered to meet management objectives.

Combining and splitting allotments would be considered when such an action would help meet plan objectives. The Henrys Fork allotment would be split into 3 allotments and managed by the guidelines of revised AMPs. The Cottonwood Creek and Antelope Wash allotments would be consolidated into one two-pasture allotment and managed by the guidelines of a new AMP.

Requests for conversions in livestock kind and season of use would be considered on a case-by-case basis following environmental analysis.

Stock driveway withdrawals numbers 4, 21, and 23 would be revoked.

See other resource management prescriptions in this document for other restrictions that may apply to livestock grazing management activities.

## Minerals Management

**MANAGEMENT OBJECTIVE:** The objective for management of the minerals program would be to maintain or enhance opportunities for mineral exploration and development.

### Leasable Minerals

#### Fluids

**MANAGEMENT OBJECTIVE:** The objective for management of oil and gas resources would be to provide for leasing, exploration, and development of oil and gas, while protecting other values.

**MANAGEMENT ACTIONS:** Table 2-26 lists lands in the planning area with oil and gas lease restrictions necessary to protect other resource values. All WSAs and incorporated cities and towns would remain closed to leasing. Additional no leasing areas would be within ¼ mile of the proposed Wild and Scenic parts of the Big Sandy and Sweetwater rivers. Approximately 231,440 acres of BLM-administered mineral estate would not be available for oil and gas leasing.

TABLE 2-26

**AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL  
(acres)  
ALTERNATIVE B**

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
No Leasing					
Big Sandy River (within ¼ mile)	240	0	0	240	240
Incorporated Cities and Towns (Rock Springs, Green River, and Superior)	3,770	2,700	0	3,090	5,790
Seedskaadee National Wildlife Refuge <sup>1</sup>	13,360	9,960	4,090	0	14,050



# ALTERNATIVES

TABLE 2-26 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres) ALTERNATIVE B

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
Sweetwater River (within ¼ mile, Wild and Scenic part)	1,460	0	0	0	0
WSAs	225,110	134,540	14,310	76,560	225,410
<b>Total No Leasing</b>	<b>243,940</b>	<b>147,200</b>	<b>18,400</b>	<b>79,890</b>	<b>245,490</b>
<b>No Surface Occupancy (NSO)<sup>2</sup></b>					
14-Mile Recreation Area	20	20	0	0	20
Aboriginal Quarry	160	0	0	160	160
Boar's Tusk	90	90	0	0	90
Candidate Plant Species Habitat <sup>3</sup>	3,110	2,700	0	430	3,130
Cedar Canyon Petroglyphs NRHP Site	20	20	0	0	20
Crookston Ranch	40	40	0	0	40
Emmons Cone	60	60	0	0	60
Greater Sand Dunes ACEC	23,900	19,250	4,650	0	23,900
LaCiede and Dug Springs Stage Stations	20	20	0	0	20
Native American Burials	2	2	0	0	2
Natural Corrals ACEC in Section 18	640	640	0	0	640
Oregon Buttes ACEC	3,450	0	0	3,450	3,450
Pilot Butte	120	0	0	120	120
Pine Springs ACEC	90	0	0	90	90
Raptor nesting (cliffs, bluffs, outcrops, and pinnacles)	890	640	130	130	900
White Mountain Petroglyphs ACEC	20	0	20	0	20
Wild horse herd viewing area + ½ mile radius	500	0	500	0	500
<b>Total No Surface Occupancy<sup>4</sup></b>	<b>33,132</b>	<b>23,482</b>	<b>5,300</b>	<b>4,380</b>	<b>33,162</b>

# ALTERNATIVES

TABLE 2-26 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres) ALTERNATIVE B

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
Seasonal Restrictions <sup>2</sup>					
Raptor Habitat (½ mile buffer)	260,020	207,160	42,040	46,830	296,030
Total Seasonal Restrictions <sup>4</sup>	260,020	207,160	42,040	46,830	296,030
Surface Disturbance Restrictions <sup>2</sup>					
1-mile Radius of Cities and Towns (Rock Springs, Green River, Point of Rocks, Table Rock, Superior, McKinnon, Eden, and Farson <sup>5</sup>	20,740	14,270	7,570	12,260	34,100
Big Sandy River (within ¼ mile)	240	0	0	240	240
Candidate Plant Species Potential Habitat <sup>6</sup>	36,550	4,520	16,790	19,010	40,320
Continental Divide Snowmobile Trail (¼ mile buffer)	2,330	0	0	2,330	2,330
Currant Creek Drainage	23,740	0	2,820	21,200	24,020
Dry Sandy Swales	20	0	0	20	20
Ericson Formation Recharge Area to Superior <sup>7</sup>	1,860	1,860	0	0	1,860
Greater Sand Dunes ACEC and ½ mile buffer	55,490	47,890	8,340	0	56,230
Highly erodible soils	158,110	62,390	34,390	63,100	159,880
Historic Trails (¼ mile buffer) <sup>8</sup>	100,210	43,720	26,700	29,420	99,840
LaBarge Bluffs, Sugarloaf, and Tolar Petroglyphs	60	40	0	20	60
Natural Corrals ACEC	1,115	1,270	0	0	1,270
North and South Table Mountains	1,280	1,280	0	0	1,280
Pine Springs Expansion	6,030	0	0	6,030	6,030
Recreation Sites (¼ mile buffer)	930	330	130	470	930
Riparian Areas	8,730	2,780	1,710	4,940	9,430
Rock Springs-Green River Expansion Area <sup>9</sup>	26,600	13,860	6,570	10,510	30,940

## ALTERNATIVES

**TABLE 2-26 (Continued)**

### AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres) ALTERNATIVE B

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
Sage Creek Watershed	52,670	6,660	32,450	13,850	52,960
Slopes greater than 25%	198,720	89,210	31,410	68,320	188,940
South Pass Historic Landmark	5,260	0	0	5,420	5,420
Sweetwater River (within ¼ mile, Wild and Scenic part)	930	0	0	930	930
View from Fontenelle Reservoir	120	220	0	0	220
VRM Class II Lands	369,840	131,340	26,340	245,540	403,220
Within 500' of water, 100 year floodplains, and wetlands <sup>10</sup>	95,550	47,050	22,140	37,860	107,050
Within 100' of inner gorge of intermittent/ephemeral streams	7,170	4,130	920	2,500	7,550
<b>Total Surface Disturbance Restrictions <sup>4</sup></b>	<b>870,230</b>	<b>393,290</b>	<b>184,310</b>	<b>322,490</b>	<b>900,090</b>

<sup>1</sup> This RMP will not make decisions for the management of federal minerals on this area.

<sup>2</sup> Refer to Appendix 2, "Wyoming BLM Standard Mitigation Guidelines."

<sup>3</sup> As new populations are identified, their locations would be added to this total.

<sup>4</sup> Areas of restriction may overlap. If they overlap, the area of overlap is only counted once.

<sup>5</sup> Mitigation would be used to provide for public health and safety.

<sup>6</sup> Searches would be required prior to surface disturbance activities.

<sup>7</sup> The town of Superior's sole source aquifer would be protected through the use of mitigation.

<sup>8</sup> All activity would conform with requirements of Class II visual values.

<sup>9</sup> Leasing would be with mitigation to protect public health and safety based upon consultation with local communities.

<sup>10</sup> Acreage figures for floodplains are based on Housing and Urban Development maps and are not complete for entire resource area.

The remainder of the planning area would be open to oil and gas leasing with restrictions that would apply to certain areas. Types of resource values that would be protected by a no surface occupancy limitation include: cultural, historic and recreation sites, certain ACECs, some topographic features, the wild horse viewing area and a ½ mile radius, candidate plant species habitat, and raptor nesting habitat. About 37,542 acres would be available for lease with a no surface occupancy restriction.

Seasonal restrictions would be placed on leases in raptor nesting habitat of 296,030 acres.

Mineral exploration and development activities would be restricted, where appropriate, to protect the following types of resource values: cultural sites and historic trails, historic sites, certain visual resources, soils and watershed, all slopes greater than 25 percent, recreation sites, the recharge area of the Superior water supply, within a 1-mile radius of populated areas, North

## ALTERNATIVES

and South Table Mountains, the new Rock Springs-Green River expansion area, potential candidate plant species habitat, ACECs, and proposed Wild and Scenic River segments. Surface disturbance restrictions would be placed on 900,090 acres.

Maps 40, 41, 42, and 43 shows those portions of the planning area where no leasing would be applied and areas where occupancy and disturbance would be limited.

### Solid Leasables (Coal)

The Federal coal management options for this alternative (Alternative B) were derived through comparing the coal screening process applications and the impact analyses of the No Action Alternative. Based on these comparisons and the management options defined for the other resources in this alternative, coal management options that provided the maximum development opportunity for the coal resources in the planning area were selected. The options were based on the assumption that any conflicts with other resource and land uses that may result from coal development could be mitigated. See Appendix 3-2 for a complete explanation of how the coal screening process was conducted and how the coal screening results were applied for each alternative in this RMP EIS.

**MANAGEMENT OBJECTIVES:** The objectives for management of the federal coal resources in the planning area would be to provide maximum opportunity for both short and long-range development of Federal coal, while still providing adequate protection of other resource values, in an orderly and timely manner, consistent with the policies of the federal coal management program, environmental integrity, national energy needs, and related demands.

**MANAGEMENT ACTIONS:** With appropriate limitations and mitigation requirements for the protection of other resource values, all BLM-administered public lands and Federal coal lands in the Green River planning area, except for those identified in Table 2-11, would be open to coal resource inventory and exploration to help identify coal resources and their development potential.

About 463,000 acres of federal coal lands within the Coal Occurrence and Development Potential area (see Map 18) would be open to further consideration for coal leasing and development (i.e., new competitive leasing, emergency leasing, lease modifications, and exchange proposals, under the Federal Coal Management Program) with appropriate and necessary conditions and requirements for protection of other land and resource values and uses (Table 2-27).

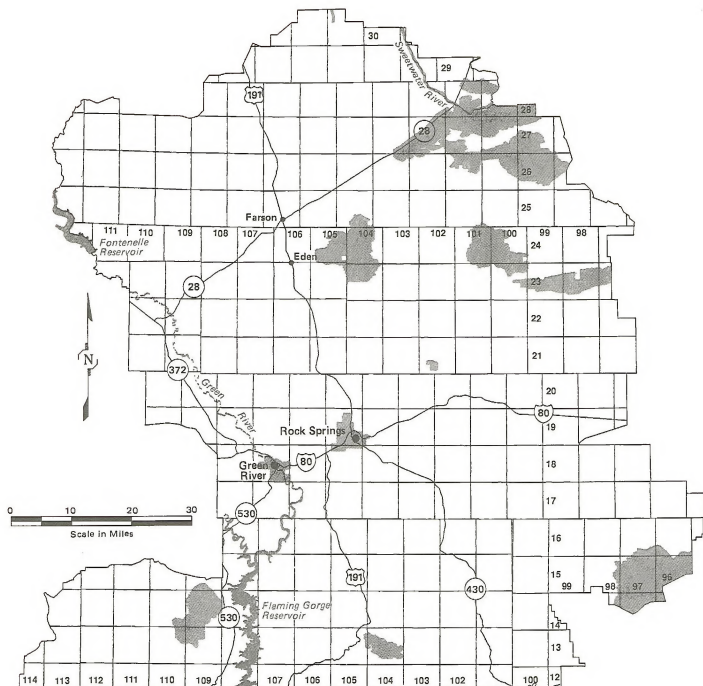
TABLE 27

### SUMMARY DESCRIPTION OF COAL SCREENING PROCESS RESULTS AND COAL MANAGEMENT ACTIONS (Alternative B)

Coal Screening Process Results	Federal Coal Lands (acres)
Total Federal Coal Development Potential Area	475,700
Leased Federal Coal Lands (Not Evaluated)	30,200
Federal Coal Lands Unsuitable For (Closed To) Leasing Consideration	12,600
<b>Coal Management Actions</b>	
Remaining Federal Coal Lands Acceptable for Leasing Consideration	463,000
Portion Subject to No Surface Occupancy Restriction	39,232
Portion Subject to No Surface Mining and Limited Surface Facilities Restriction	3,810

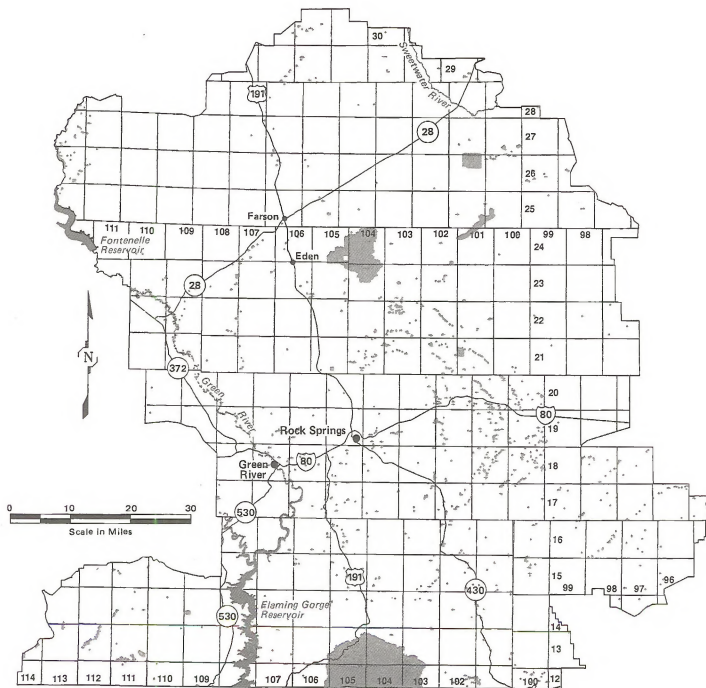
These 463,000 acres would be subject to continued field investigations, studies and evaluations to determine if certain methods of coal mining can occur without having a significant long-term impact on wildlife, in general, and on threatened and endangered plant and animal species and their essential habitats. Such inves-


tigations, studies and evaluations may be conducted on an as-needed or case-by-case basis in reviewing individual coal leasing or development proposals (e.g., mine plans) or, if opportunities or needs arise, area-wide studies may be conducted. These studies would include keeping resource base data current (e.g., where existing



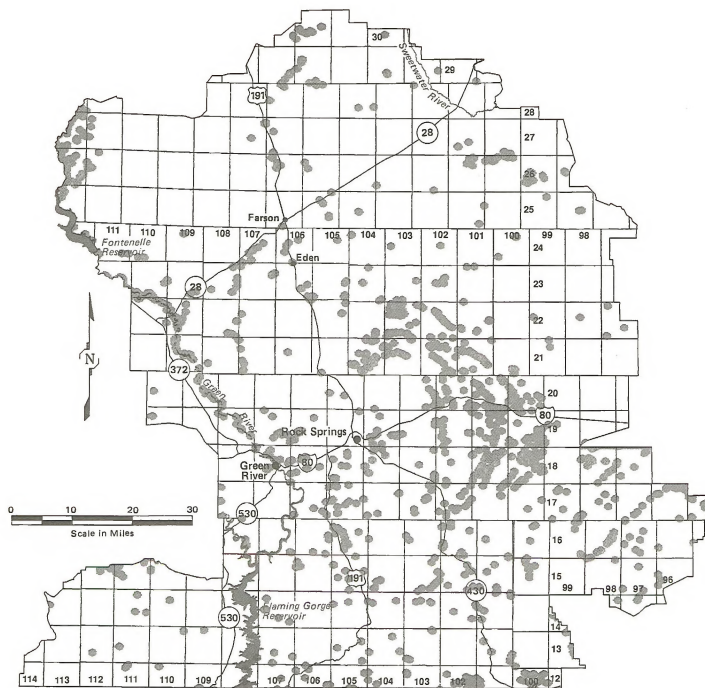
 No Lease Area

Map 40  
Alternative B  
**No Lease Areas**  
Green River Planning Area



 No Surface Occupancy Area

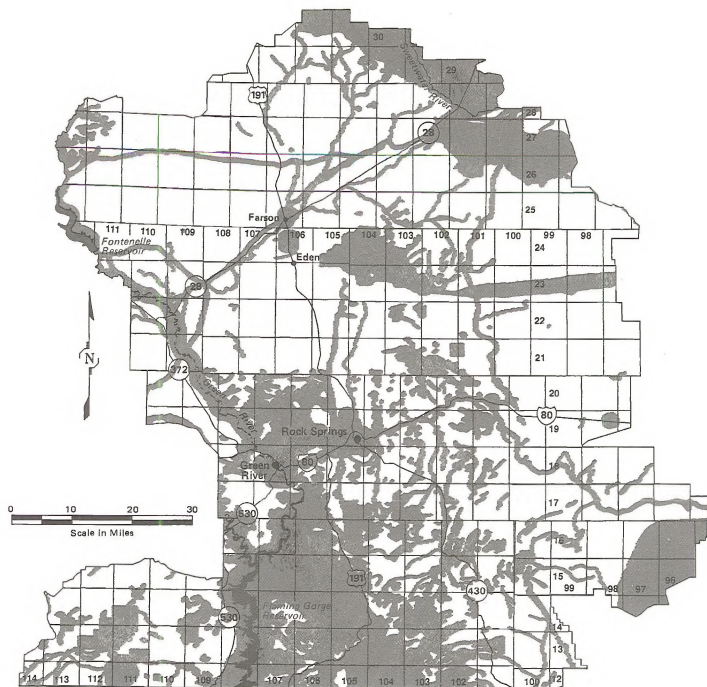
Map 41  
Alternative B  
**No Surface Occupancy Areas**  
Green River Planning Area




Seasonal Restriction Area

Map 42  
Alternative B  
**Seasonal Restriction Areas**  
Green River Planning Area





 Surface Disturbance Restriction Area

**Map 43**  
**Alternative B**  
**Lease with Surface**  
**Disturbance Stipulations**  
**Green River Planning Area**

## ALTERNATIVES

raptor nests become abandoned or where new raptor nests become established), analysis of effects to wildlife and threatened and endangered species habitats and populations, and the cumulative effects of mining operations and other activities in the area. Consultation with other agencies (e.g., USFWS, WGFD, etc.), special interest groups, and with industry would occur as needed or required.

About 12,600 acres of Federal coal lands would be closed to Federal coal leasing and development. Included in this area are the expansion area for the City of Rock Springs (about 12,200 acres), portions of the Interstate 80 and Union Pacific Railroad rights-of-way, some floodplain areas, and the groundwater recharge zone for the Town of Superior's water supply.

About 405 acres of the North Fork Vermillion Creek drainage would be open to further consideration for Federal coal leasing and development by either surface or subsurface mining methods. However, the area would be managed as an avoidance area for surface disturbing activities. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities would be emphasized and wetlands that are irreparably impacted would require replacement with areas of equal or greater value.

Big game crucial winter ranges and birthing areas (about 276,200 acres) would be open to further consideration for Federal coal leasing and development provided that management actions listed for habitat for wildlife species of high State interest are applied and long-term impacts are avoided.

The greater Cooper Ridge and Elk Butte areas (about 25,765 acres) would be open to further consideration for Federal coal leasing and development, pending further study. This study is for the purpose of defining the extent of any deer and antelope crucial winter range in the area, and for determining if certain methods of coal mining can occur in the area without having a significant long-term impact on the deer and antelope herds.

For the protection of important petroglyph sites, other important cultural, resource values, and important geologic and ecologic features, about 3,010 acres of Federal coal lands would be open to further leasing and development consideration for subsurface mining methods only (Refer to the Natural Corals, Cedar Canyon, Greater Sand Dunes, and Steamboat Mountain portions of the Special Management Area section for more details on these lands). Any Federal coal leasing and development on these lands would include a no surface occupancy requirement for any related ancillary facilities or surface disturbing activities. These same lands would

be closed to surface mining methods and any related activities.

About 12,200 acres of Federal coal lands within the City of Rock Springs Expansion Area would be open to consideration for coal leasing and development with provision for any needed restrictions or requirements to assure that subsidence will be avoided or mitigated and that public health and safety will not be adversely affected. A leasing plan would be prepared prior to issuing any leases.

In general, cultural sites on Federal coal lands would be managed as avoidance areas for surface disturbing activities. As avoidance areas, cultural sites would be open to consideration for coal leasing and development. Surface disturbing activities associated with such actions as surface coal mining methods, exploration drilling, construction and location of ancillary facilities, roads and other types of rights-of-way, etc., would be avoided in these areas, if possible. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities (primarily excavation and other data recovery measures) would be emphasized. Except for those closed to leasing, or closed to surface mining methods, or identified as having no surface occupancy restrictions, this includes cultural sites that are either listed or that are eligible for listing on the NRHP. If necessary, appropriate buffer zones would be established to protect sites that are listed or eligible for listing on the NRHP. Data recovery measures would be implemented in the context of an NRHP district to maximize efficiency of data recovery efforts.

Grouse nesting areas (sage or sharptail grouse) would be open to consideration for Federal coal leasing and development with the following requirement:

If an occupied grouse nest that would be adversely affected by coal mining and related surface disturbing activities is identified, surface uses and activities would be delayed in the area of influence for the nest until nesting is completed.

Active grouse leks (sage and sharptail grouse) and the area within a ¼ mile radius of active leks would be managed as avoidance areas for surface disturbing activities and would be open to consideration for Federal coal leasing and development with the following requirements:

Surface disturbing activities associated with such actions as surface coal mining methods, exploration drilling, construction of roads and other types of rights-of-way, etc., would be avoided in these areas, if possible. In cases where it is not possible to avoid

## ALTERNATIVES

these areas, intensive mitigation of the surface disturbing activities would be emphasized.

Wetland and riparian areas on Federal coal lands (about 2,000 acres) would be managed as avoidance areas for surface disturbing activities and would be open to consideration for coal leasing and development with the following requirements:

Surface disturbing activities associated with such actions as surface coal mining methods, exploration drilling, construction of roads and other types of rights-of-way, etc., would be avoided in these areas, if possible. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities would be emphasized.

### Areas of BLM-Administered Public Land Surface Overlying State-Owned Coal

About 29,000 acres of BLM-administered public land surface overlying state-owned coal would be open to further consideration for coal development with appropriate and necessary conditions and requirements for protection of the public land surface and surface resource values and uses. About 1,000 acres would be unsuitable for further leasing consideration.

These 29,000 acres would be subject to continued field investigations, studies and evaluations to determine if certain methods of coal mining can occur without having a significant long-term impact on wildlife, in general, and on threatened and endangered plant and animal species and their essential habitats. Such investigations, studies and evaluations may be conducted on an as-needed or case-by-case basis in reviewing individual coal leasing and development proposals by the state or, if opportunities or needs arise, area-wide studies may be conducted. These studies would include keeping resource base data current (e.g., where existing raptor nests become abandoned or where new raptor nests become established), analysis of effects to wildlife and threatened and endangered species habitats and populations, and the cumulative effects of mining operations and other activities in the area. Consultation with other agencies (e.g., USFWS, WGFD, etc.), special interest groups, and with industry would occur as needed or required. About 2,400 acres would be closed to surface mining activity and either closed to any surface facilities or restricted to very limited surface facilities.

### Preference Right (Coal) Lease Applications (PRLAs)

Processing of the Beans Spring coal PRLAs (the one coal PRLA project proposal in the planning area) would be completed. In the preparation of the EIS for this PRLA

project, special attention will be given to those sensitive value areas identified through the unsuitability review and multiple use conflict evaluation. The EIS will result in development of needed stipulations for the protection of sensitive values. These protective stipulations will be carried through the final processing and leasing decisions for the PRLA project, which will result in determining if the preference right applicant is successful in meeting the final showing requirements and is entitled to a preference right (non-competitive) Federal coal lease for the Beans Spring coal project area (Appendix 3-2).

### Solid Leasables (Sodium/Trona)

**MANAGEMENT OBJECTIVES:** The objectives for management of the federal sodium (trona) resource would be to provide for both short- and long-range development of federal sodium (trona) in an orderly and timely manner.

**MANAGEMENT ACTIONS:** The known sodium leasing area (Map 18) would be open to exploration and consideration for leasing and development, but would be closed to prospecting permits. The remainder of the planning area would be open to sodium prospecting except for areas closed to surface mining or mechanical prospecting type activities (areas closed to drilling, vehicle use, and explosive charges) (Table 2-11). Leasing would be considered on a case-by-case basis and management direction applied in this plan would be considered.

### Mineral Materials

**MANAGEMENT OBJECTIVE:** The objective for management of salable minerals would be to provide mineral materials in convenient locations for users while protecting surface resources.

**MANAGEMENT ACTIONS:** Sale areas and community pits would be established as required. Adequate mine reclamation plans for both new and existing use areas would be developed. Requests from users for mineral material disposals would be evaluated.

Sales of mineral materials from established sites would be allowed. Proposed sales from new sites would be evaluated on a case-by-case basis.

Additional community pits and common use areas would be established. Topsoil and moss rock areas would be provided for.

Table 2-13 shows the areas that would be closed to mineral material sales.

## ALTERNATIVES

### Locatable Minerals

**MANAGEMENT OBJECTIVE:** The objective for management of locatable minerals would be to provide opportunities to explore, locate, and develop mining claims while protecting other resource values.

**MANAGEMENT ACTIONS:** With the exception of lands withdrawn from locatable minerals, the planning area would be open to mineral exploration, location, and development. The existing minerals classification withdrawals (phosphate, coal, oil shale) would be revoked (Table 2-7). Table 2-6 lists proposed withdrawals.

### Geophysical

**MANAGEMENT OBJECTIVE:** The objective for management of geophysical activities would be to provide opportunities for exploration of resources or scientific uses, while protecting other resource values.

**MANAGEMENT ACTIONS:** The entire planning area would be open to consideration for geophysical exploration, subject to appropriate environmental analysis and surface protection stipulations. The areas listed in Table 2-14 would be closed to the use of geophysical vehicles and explosive charges.

ORV management prescriptions for the use of vehicles would not apply in all areas (see Off-Road Vehicle Management for this alternative).

Geophysical vehicle travel through developed and semi-developed recreation sites would be restricted to existing roads and trails.

Geophysical activities would be limited to within 1/4 mile or visual horizon (whichever is closer) of historic trails (436 miles, 2,616 acres).

See other resource management prescriptions in this document for other restrictions that may apply to mineral management activities.

### Off-Road Vehicle Management

**MANAGEMENT OBJECTIVE:** The objective for off-road vehicle (ORV) management would be to provide opportunities for off-road vehicle use in conformance with other resource objectives.

Some types of motor vehicle use would be allowed under the "necessary tasks" work exemption provided resource damage did not occur. Examples of necessary tasks include picking up big game kills, repairing range improvements, managing livestock, and geophysical activities associated with oil and gas exploration.

**MANAGEMENT ACTIONS:** Off-road vehicles would be managed according to the ORV designations in the ORV plans (Table 2-28 and Map 44).

TABLE 2-28

#### ORV DESIGNATIONS (Alternative B)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
Aboriginal Quarry Site Closed	160	To protect cultural values.
Candidate Plant Species Closed (does not apply to over-the-snow vehicles)	3,110	To protect plant populations.
Cedar Canyon ACEC Limited to existing roads and trails over-the-snow vehicles)	2,550	To protect wildlife and (nocultural values.

# ALTERNATIVES

TABLE 2-28 (Continued)

## ORV DESIGNATIONS (Alternative B)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>Crookston Ranch</b> Closed	40	Crookston Ranch portion of ACEC closed to protect historic site.
<b>Currant Creek/Sage Creek</b> Limited to existing roads and trails, including over-the-snow vehicles	75,900	To protect sensitive fisheries and watershed values.
<b>Dry Sandy Swales</b> Closed	20	To protect integrity of setting and soils.
<b>Dug Springs Station</b> Limited to designated roads and trails	10	To protect historic values.
<b>General GRRRA</b> Limited to existing roads and trails	3,022,070	To reduce resource damage and limit new overnight roads.
<b>Greater Sand Dunes</b> Open	5,500	Area designated open on active sand dunes to allow recreating public a place to play in the sand dunes.
Limited to existing roads and trails	6,000	To protect resource values.
Closed		5,000To enhance development activity and protect public health and safety.
<b>Green River City Limits</b> Closed	4,500	Hillsides and steep slopes within a 2-mile radius around the city limits are closed (including snow-mobiles) in cooperation with the Green River City ordinance to prevent impacts from ORVs.
<b>LaBarge Bluffs Petroglyphs</b> Closed	20	To protect cultural values.
<b>LaCiede Stage Station</b> Limited to designated roads and trails	10	To protect historic values.
<b>Monument Valley Area</b> Limited to existing roads and trails	64,300	To protect wildlife habitat and fragile soils.



# ALTERNATIVES

TABLE 2-28 (Continued)

## ORV DESIGNATIONS (Alternative B)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>Natural Corrals ACEC</b> Closed	20	The NRHP site and the trail 1/2 mile to the spring is closed to protect wildlife and cultural values.
Limited to designated roads and trails	1,300	To protect wildlife and cultural values except for 15 acres of the NRHP site and the trail 1/2 mile to the spring which are closed.
<b>North &amp; South Table Mountains</b> Limited to existing roads and trails	1,280	To protect cultural and wildlife values.
<b>Oregon Buttes ACEC</b> Closed	3,450	Closed to protect ACEC values.
<b>Parting of the Ways</b> Closed	40	To protect historical values.
<b>Pine Springs ACEC</b> Limited to existing road and trails	90	To protect cultural and prehistoric values.
<b>Pine Spring Expansion Area</b> Closed - including over-the snow vehicles	5,300	To protect cultural and prehistoric values.
Limited to existing roads and trails	730	To protect cultural and prehistoric values.
<b>Raptor Nesting Areas</b> Limited through seasonal closures (Feb. 1 - July 31)	890	To protect nesting raptors.
<b>Red Creek ACEC</b> Closed	8,020	To protect watershed values.
Limited to existing roads and trails	59,400	To protect watershed values.
<b>Riparian Areas</b> Limited to existing roads and trails	8,730	To protect riparian and watershed values.
<b>Sage Creek Mountain</b> Limited to existing roads and trails	1,280	To protect cultural values and T&E plants.

## ALTERNATIVES

TABLE 2-28 (Continued)

### ORV DESIGNATIONS (Alternative B)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>South Pass</b> Closed	41,400	To protect cultural and scenic values.
Limited to existing roads and trails	46,180	To protect cultural values.
<b>Steep Slopes of White Mountain</b> Limited to existing roads and trails	68,640	To protect watershed and visual values.
<b>Sugarloaf Petroglyphs</b> Closed	20	To protect cultural values.
<b>Tolar Petroglyphs</b> Closed	20	To protect cultural values.
<b>White Mountain Petroglyphs ACEC</b> Limited to existing roads and trails	20	To maintain integrity of setting and reduce theft and vandalism.

ORV open acreage would be reduced only in areas of development and in the Greater Sand Dunes ACEC. Development areas would be closed to ORV use.

Generally, over-the-snow vehicle use would be subject to the prescriptions described in Table 2-28 unless a site specific analysis determines otherwise.

An ORV implementation plan would be prepared to replace the two existing ORV plans. This ORV plan would reflect the ORV designations made in this plan.

Off-road vehicles refers to mechanical and mechanized vehicles such as mountain bikes and big game carriers. The implementation plan would consider mountain bike and other mechanized vehicles needs. Some types of motor vehicle use would be allowed under the "necessary tasks" work exemption provided resource damage did not occur. Examples of necessary tasks include picking up big game kills, repairing range improvements, and managing livestock. Approximately 137,672 acres would remain closed to off-road vehicle use to protect naturalness, solitude, and opportunities for unconfined recreation.

Geophysical vehicle use would conform to some ORV management prescriptions. Use of vehicles would not be limited to existing roads and trails unless a site specific analysis determines it is necessary.

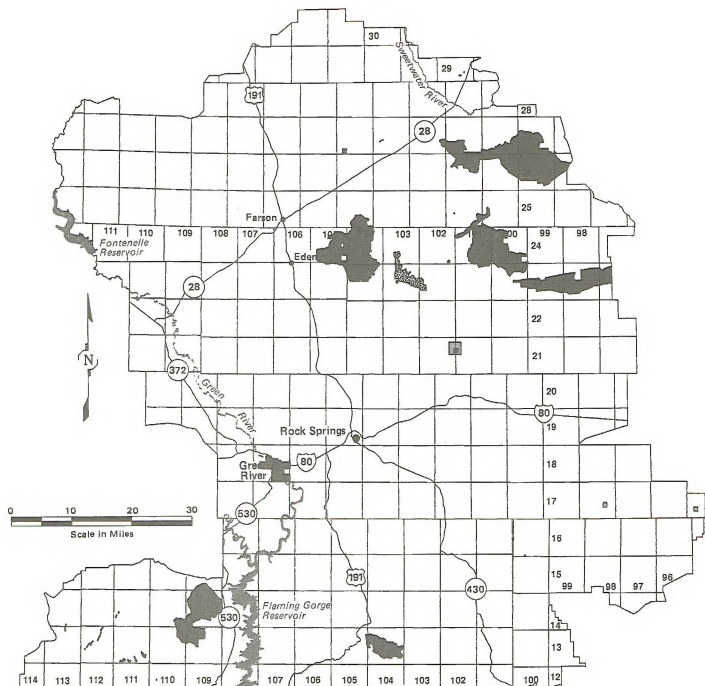
See other resource management prescriptions in this document for other restrictions that may apply to off-road vehicle management activities.

### Recreation Resource Management

**MANAGEMENT OBJECTIVES:** The objectives for recreation management would be to ensure the continued availability of outdoor recreational opportunities sought by the public while protecting other resources. Other objectives would be to meet legal requirements for the health and safety of visitors and to mitigate conflicts between different types of resource users.

**MANAGEMENT ACTIONS:** Most public lands in the planning area would be open and available for consideration to all individual, commercial, and competitive outdoor recreation uses. Manage the existing developed and undeveloped recreation areas to insure that the sites provide maximum benefit to the visitor.





Map 44  
Alternative B  
**Off Road Vehicle Designations**  
Green River Planning Area

## ALTERNATIVES

A 14-day camping limit on all public lands would be maintained. Camping would be limited to 14 days within a 28-day consecutive period. After the 14th day of occupation, campers must move outside a 5-mile radius of the previous location. Camping would be allowed adjacent to crucial wildlife and livestock waters.

Areas for ORV rallies, cross-country races, and outings would be provided on a permit basis, including hill climbs in existing use areas.

Special recreation permits would be allowed on a case-by-case basis. Necessary mitigation for special recreation permits, commercial recreation uses, and major competitive recreation events would be included to provide resource protection and public safety.

The Oregon Buttes, Honeycomb Buttes, Steamboat Mountain, Leucite Hills, Red Creek, Pine Mountain, Little Mountain, and Cedar Canyon areas would be managed to assure their continuing value for recreational opportunities (Map 21). Recreation area management plans would be prepared for these areas.

The Killpecker Sand Dunes, Oregon and Mormon Pioneer National Historic Trails, the Green River, the Continental Divide Snowmobile Trail, and Wind River Front would be managed as special recreation management areas (about 374,618 acres). Existing management plans for Sand Dunes, Oregon and Mormon Pioneer National Historic Trails would be implemented, and new plans for the Green River and the Wind River Front would be written.

Recreation project plans and an interpretive prospectus would be developed for the 14-Mile recreation site, Sweetwater Campground, Boar's Tusk, Leucite Hills, the Continental Divide Snowmobile Trail, the Farson fossil fish beds, and the proposed wild horse viewing area.

The integrity of the Continental Divide Snowmobile Trail would be maintained by limiting large surface-disturbing activities and structures on or within 1/4 mile of the trail (2,330 acres). Such actions would be designed to avoid this area unless a site specific analysis determines that adverse effects to the trail would not occur. The area would be open to the development of shelters and facilities to enhance the management of the snowmobile trail. The existing trail system would be expanded by adding loop trails.

Mountain biking trail opportunities would be explored.

The Green River, Sweetwater River, Big Sandy River, and Bitter Creek between Rock Springs and Green

River would be managed for recreational uses. Recreation area management plans would be developed. The establishment of a "greenbelt" along the Green River from Fontenelle Dam to Flaming Gorge Reservoir (approximately 3,200 acres) would be supported.

Four backcountry byways and one scenic loop for the Tri-Territory Loop, the Lander Road, Fort LaCade Loop, the Firehole-Little Mountain Loop, and the Flaming Gorge Scenic Loop (Map 20) have been identified and would include consideration for mountain bike use. Brochures and interpretive signs would be prepared to inform users.

Camping would be allowed adjacent to crucial wildlife and livestock waters.

Developed recreation sites would be allowed under guidance of Executive Orders 11990 and 11998.

The natural values of Boar's Tusk, Pilot Butte, and Emmons Cone would be protected from surface disturbance and the integrity of the geologic features would be maintained. No surface occupancy would be allowed on Boar's Tusk, Pilot Butte, and Emmons Cone (270 acres), unless activity would enhance management of these features (Table 2-26 and Table 2-4). Interpretive facilities would be allowed. Surface disturbance would not be allowed in 14-Mile recreation area (20 acres) without an approved plan.

Surface disturbing activities would not be allowed on recreation sites (6 developed, 5 semi-developed, 14 undeveloped) or within 1/4 mile unless activities are determined to be compatible with recreation objectives for the area. An approved plan would be required prior to the site disturbance.

See other resource management prescriptions in this document for other restrictions that may apply to recreation resource management activities.

## Vegetation Management

**MANAGEMENT OBJECTIVES:** The objectives for management of vegetation would be that vegetation treatments (mechanical, biological, fire) would be used to remove stands of brush in specific areas to meet wildlife, watershed, and wild horse management objectives and provide for plant diversity to meet wildlife and livestock management objectives.

**MANAGEMENT ACTIONS:** Approximately 290,000 acres have been identified for potential treatment to primarily enhance livestock forage.

## ALTERNATIVES

Prescribed fire would generally be the preferred method of vegetation manipulation to convert stands of brush to grasslands and to promote regeneration of aspen stands and/or shrub species.

Prescribed burns would be conducted in crucial big game winter ranges to enhance other resource values.

Treatments would be designed for maximum brush removal as first priority; visual esthetics and wildlife habitat needs would be secondary.

Sagebrush treatment would be allowed on 20 percent antelope and mule deer winter ranges. Treatment areas would be irregular in shape (approximately 19,400 acres). This would apply to federally administered winter range only.

Treatment units within VRM Class II areas would not exceed 100 acres in size and no more than 25 percent of the area would be treated within a 10-year period (14,125 acres).

No more than 20 percent of sagebrush within 1/2 mile of sage grouse leks would be treated within a 10-year period.

There would be no buffer strips applied to vegetation treatments along perennial streams. Burning along the inner gorges of intermittent and ephemeral drainages would be allowed to meet livestock objectives.

Herbicide loading sites would be located at least 500 feet from live water, floodplains, or riparian areas and would be utilized in accordance with the guidelines in Appendix 9-5. Treatments would adhere to all label directions.

See other resource management prescriptions in this document for other restrictions that may apply to vegetation management activities.

### Visual Resource Management

**MANAGEMENT OBJECTIVE:** The objective for visual resource management would be to maintain or improve scenic values and visual quality.

**MANAGEMENT ACTIONS:** Visual resource management classifications would be modified to accommodate resource production by establishing classes based upon manageability rather than just inventory. Activity would be allowed in the changed rating areas that may not have been allowed under previous classifications. The VRM classification acreages and boundaries would

become as shown on Table 2-16 and Map 45. The established visual management class for some areas would be lower than the current inventory classification.

The 12.5 miles of Highway 28 around South Pass would be managed as a Class III area. Other major highways would be managed according to current VRM classifications. The South Pass area would be managed for Class III visual values.

Suitable wild horse herd viewing area(s) to enhance public viewing of horses would be developed. Short-term intrusions and actions that would blend with the landscape or would benefit the intent of the wild horse viewing area would be considered. No surface occupancy would be allowed within a 1/2 mile radius of any wild horse viewing area (500 acres).

No access or work trail or road, earth cut or fill, structure or other improvement, other than an active drilling rig, would be permitted if it can be viewed from the Fontenelle Reservoir.

See other resource management prescriptions in this document for other restrictions that may apply to visual resource management activities.

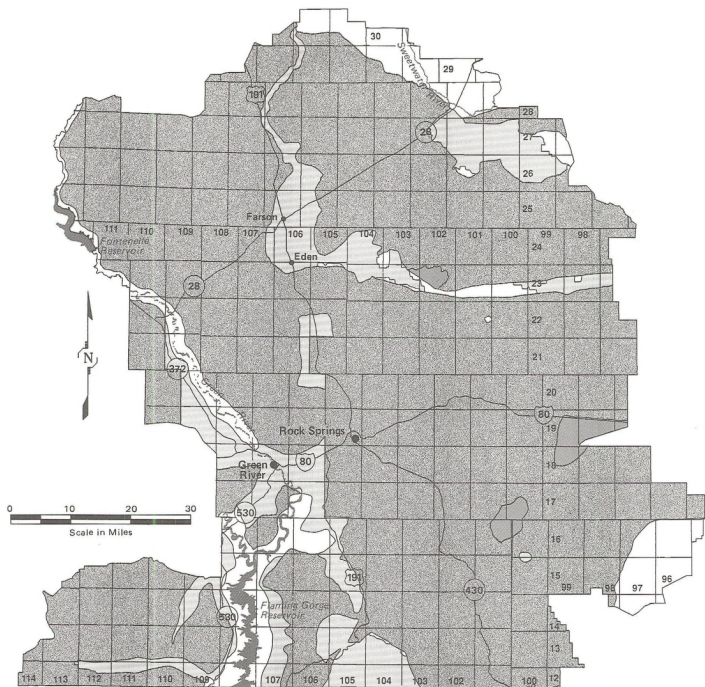
### Watershed/Soils Management

**MANAGEMENT OBJECTIVES:** The objectives for watershed/soils management would be to stabilize and conserve soils, to increase vegetative production, to maintain or improve water quality, and to protect, maintain, or improve wetlands, floodplains, and riparian areas.

**MANAGEMENT ACTIONS:** Channel erosion, specifically bank erosion, would be reduced where it has resulted in severe losses of riparian habitat, and accelerated surface erosion would be reduced in areas having severe erosion susceptibility.

Additional sediment, phosphate, and salinity load would be controlled in the planning area, where possible.

BLM would participate with federal and local government agencies in the development and implementation of plans to reduce salinity in the Jack Morrow and Eighteen-Mile Canyon watersheds and the Big Sandy Seeps and in the development and implementation of plans to reduce phosphates delivered to the Fontenelle and Flaming Gorge Reservoirs. Salinity control plans and plugging of flowing wells would be accomplished.



- ☐ Class II
- ☐ Class III
- ☐ Class IV
- ☐ Rehabilitation Area

**Map 45**  
**Alternative B**  
**Visual Resource**  
**Management**  
**Green River Planning Area**



## ALTERNATIVES

Existing roads, trails, seismic lines, rights-of-way, and oil and gas sales would not have rehabilitation plans developed. New activities would require reclamation plans.

No watershed management plans would be developed.

Surface disturbing activities would avoid areas within 500 feet of or in 100-year floodplains, wetlands, or perennial streams and their associated wetlands and within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages, unless an approved plan to mitigate impacts to water quality could be developed. Linear crossings would be considered on a case-by-case basis.

Vegetative buffer strips would be maintained between developed recreational facilities and live water.

Roads would be constructed as described in BLM Manual 9113. New main artery roads would be designed to reduce sediment, salt, and phosphate loading to the Green River. Running surfaces of the roads would be graveled provided that the base does not already contain sufficient aggregate. Upgrading and graveling of existing main artery roads would be instituted on an as-needed basis.

Reserve and production pits would be lined on a case-by-case basis (Appendix 5-1).

Surface disturbing activities would avoid the areas slopes greater than 25 percent (198,720 acres) or activity during wet and muddy periods, unless an approved plan and acceptable mitigation could be developed.

Large or heavy truck traffic would not be allowed during wet periods unless the roads are graveled for all season use.

Crossings of ephemeral, intermittent, and perennial streams associated with road and utility line construction would be restricted until after spring runoff and normal flows are established. Exceptions may be approved in written authorization from the Area Manager.

Areas where groundwater was less than 100 feet in depth from the surface and have a permeability of no more than 0.1 foot/day would be closed to any plant, mill, or associated tailing pond and sewage lagoon.

Recharge areas would be managed to protect groundwater quality. Activities within the Superior recharge area would be designed to protect groundwater quality.

See other resource management prescriptions in this document for other restrictions that may apply to watershed or soils management activities.

## Wild Horse Management

**MANAGEMENT OBJECTIVES:** The objectives for management of wild horses would be to protect, maintain, and control a viable, healthy herd of wild horses while retaining their free-roaming nature; to provide adequate habitat for free-roaming wild horses by management consistent with environmental protection; and to provide opportunity for the public to view wild horses.

**MANAGEMENT ACTIONS:** Horses would be maintained at AMLs of 1,036 to 1,450 horses within four existing Wild Horse Herd Management areas (Map 25 and Table 2-24). Adequate forage would be reserved for all wild horse populations (16,200 AUMs).

Management plans for the 4 wild horse herd management areas would be implemented.

Horses would not be maintained or managed for in the Figure Four Allotment of the Desert Common-Figure Four Interim Wild Horse Herd Management Area.

Fertility and selective gathering programs would be implemented in each of the wild horse areas. These actions would aid in stabilizing populations, managing for conditions and special characteristics, and supply an adoptable population (young horses). Gathering cycles would vary depending upon plan objectives, resource conditions, and needs (Table 2-25).

Fencing would be restricted to those situations where it would enhance multiple-use values. All new fences would be constructed in such a manner as to minimize restriction of wild horse movement.

Water developments would be proposed in the Rock Springs Allotment primarily to enhance wild horse habitat (Appendix 9-4). Only controlled waters (i.e., wells) would be developed.

Other resource uses would be maintained and protected consistent with resource objectives while maintaining viable, healthy herds and appropriate management levels. Wild horses would be managed in their natural state and provide the public the recreational opportunity for viewing wild horses.

WHMAs would be managed in a healthy state and for an ecological balance among wild horses and land and resource uses.

## ALTERNATIVES

See other resource management prescriptions in this document for other restrictions that may apply to wild horse management activities.

### Wildlife Management

**MANAGEMENT OBJECTIVES:** The objective for management of wildlife and fish habitat would be to maintain and enhance fish and wildlife resources so that forage production and quality of rangelands and fish and wildlife habitat would be maintained or improved to provide for diversity of wildlife resources.

The objective for management of wetlands/riparian areas would be to achieve a healthy and productive condition for long-term benefits and values in concert with range, watershed, and wildlife needs. Wildlife habitat would be managed to maintain biological diversity of plant and wildlife species within habitat capabilities.

**MANAGEMENT ACTIONS:** Habitat for threatened, endangered, and sensitive plant and animal species would be provided, maintained, or improved through vegetative manipulation, mitigation measures, or other management actions including habitat acquisition and easements.

Wildlife habitats would be maintained through restrictions on activities and timely reclamation of disturbed sites. Seasonal restrictions for surface disturbing activities would not be placed in big game crucial winter ranges (1,500,000 acres) or big game parturition areas (127,120 acres). No restrictions would be imposed in sage grouse leks and nesting areas or within a 2-mile radius (447,170 acres).

Nesting raptors would be protected by restricting activities within 1/2 to 1 mile radius of active historic raptor nesting sites (depends on species) (260,020 acres) (Table 2-10). Active or historic raptor nesting sites would be protected and managed for continued nesting activities (Table 2-26).

The CMA with the WGFD would continue annual monitoring and maintenance of wildlife waters. Livestock water developments would be allowed in big game winter range.

Special management and riparian management enclosures would be maintained as needed, and existing enclosure plans for enhancement of wildlife habitat would be implemented. Forage (AUMs) within all enclosures would be withdrawn from livestock use in the respective grazing allotments. Existing enclosures would be analyzed for retention.

Aquatic, wetland, and riparian habitat would not be suitable for disposal unless opportunities exist for land exchange for lands of equal or better value. Additional lands along perennial waters and wetlands would be acquired.

Riparian habitats and wetlands would be managed in a healthy vigorous condition (95,550 acres). About 50 percent of riparian areas would achieve proper functioning condition.

All known fences that are documented to be a problem to migratory big game would be modified to conform to BLM fence standards within 4 years following problem identification.

Disturbed or altered habitat would be restored with the objective to attain desired native plant communities, with livestock grazing objectives given first priority and wildlife needs and soil stability considered.

All methods of animal damage control would be considered, including M-44s and other predicides. Minimum viable predator population would be maintained.

Wildlife habitat mitigation and improvement plans would be developed to mitigate wildlife habitat losses for recently developed and new oil and gas areas. Transportation plans would be developed in cooperation with the companies.

See other resource management prescriptions in this document for other restrictions that may apply to wildlife management activities.

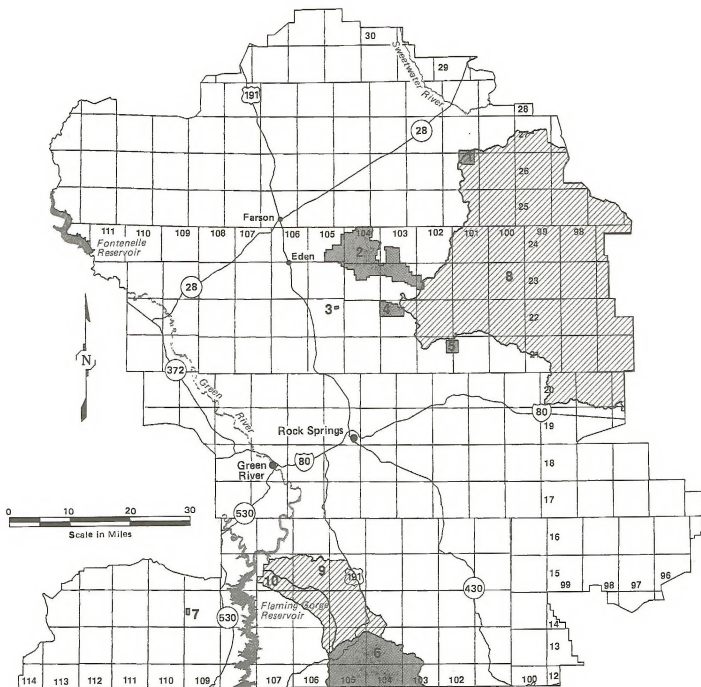
### Special Management Areas

#### Candidate Plant Species (31,340 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the candidate plant species would be to protect candidate plant species and their crucial habitats.

**MANAGEMENT ACTIONS:** No ACEC would be designated for *Arabis pusilla*, *Astragalus proimanthus*, *Descurainia torulosa*, or *Thelesperma pubescens*.

Known locations of candidate plant species communities (33 locations, about 440 acres) (see Map 46) would be closed to: 1) surface disturbing activities that could adversely affect the candidate plant species and their habitat (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-26 and Table 2-5);



- Existing ACECs
- 1 Oregon Buttes
  - 2 Sand Dunes
  - 3 White Mountain Petroglyphs
  - 4 Cedar Canyon
  - 5 Natural Corals
  - 6 Red Creek
  - 7 Pine Spring

- Other Areas
- 8 Red Desert Area
  - 9 Sage Creek
  - 10 Currant Creek

Note: Tri-State Monument is composed of Currant Creek, Red Creek, and Sage Creek

Map 46  
Alternative B  
**Special Management Areas**  
Green River Planning Area



## ALTERNATIVES

2) mineral material sales; 3) off-road vehicular travel including those used for geophysical exploration activities; and 4) surface mining activities and facilities associated with leasable minerals.

Fire suppression activities would be limited to existing roads and trails in actual plant sites and potential habitat areas.

The 440 acres of known plant locations would be open to the location of mining claims and withdrawal from mineral location would not be pursued.

Any management actions on potential habitat of candidate plant species communities (about 30,900 acres) would require searches for the plant species prior to projects and activities. These areas would be closed to activities that could adversely affect the plant species and habitat, where candidate plants and important habitat are located. Off-road vehicle travel would be limited to existing roads and trails. Geophysical activities would be managed to avoid known candidate plant species populations.

Fencing, interpretive signs, or barriers to ensure protection to the plant species would be allowed in potential habitat areas.

### Cedar Canyon ACEC (2,550 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Cedar Canyon ACEC would be to provide protection and enhancement of cultural and scenic values and wildlife habitat.

**MANAGEMENT ACTIONS:** The Cedar Canyon ACEC would be retained.

The entire ACEC would be open to consideration for mineral leasing with restrictions to protect cultural and wildlife values, particularly raptors, and watershed values. Seasonal constraints would not be applied to big game winter ranges (Table 2-10). The entire ACEC would be open to the location of mining claims.

Prescribed management actions for livestock grazing would include continuous monitoring and establishment of riparian objectives.

Highly erodible soil areas throughout the ACEC would be managed to maintain or reduce erosion levels and improve vegetation cover. Activities would be designed to avoid these areas, and guidelines necessary to protect these areas would be developed. Engineering design and mitigation plans would be required for sur-

face disturbing activities on slopes in excess of 25 percent grade to ensure unacceptable impacts would not occur to ACEC values.

The various recreational activities such as camping, picnicking, hunting and winter sports that occur in the area would be developed, maintained, preserved, or enhanced to provide for an optimum and satisfying visitor experience. Facilities and projects would be signed to provide information about sites in the area and directions for travel through the ACEC.

The ACEC would be open to over-the-snow vehicle use. All roads would be maintained and surfaced according to standards. Properly sized culverts would be placed accordingly. Additional access would be acquired to this ACEC. Signing and closing of all nonessential roads and trails would be accomplished.

The ACEC would be managed in accordance with Class II visual resource management standards to protect, maintain, and enhance the visual resource values. All future facilities would be designed to blend with the landscape, camouflage painted, and seeded to keep visual resource impacts to a minimum.

The Cedar Canyon NRHP site which contains the petroglyphs (20 acres) would be closed to: 1) surface disturbing activities that could adversely affect the petroglyph site (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-26 and Table 2-5); 2) to mineral material sales; 3) to off-road vehicle travel (this includes 1/2 mile of road to the petroglyphs); 4) to the use of explosives and blasting, seismograph vehicles and vibroseis operations; and 5) to the use of fire retardant chemicals containing dyes.

Coal leasing would be considered; however, no surface mining and no facilities would be allowed on the petroglyphs. The NRHP site would be open to geophysical activities that involved only pedestrian traffic, and hand-carried cables and recording devices.

The remainder of the ACEC (2,530 acres) would be an avoidance area for surface disturbing activities, but activities could be considered provided no unacceptable adverse impacts to ACEC values would occur and activities could be reclaimed and blend with the landscape. Coal mining activities would be allowed provided scenic, raptor, big game, and watershed conflicts could be mitigated.

The remainder of the ACEC (2,530 acres) would be open to: 1) the location of mining claims; 2) to mineral

## ALTERNATIVES

material sales; and 3) seismograph activity including the use of explosives and blasting, provided ACEC values could be protected. Off-road vehicle use, including seismograph vehicles, would be limited to existing roads and trails but would not be restricted during winter and spring except to mitigate adverse affects to nesting raptors.

### Greater Sand Dunes ACEC (25,250 acres)

**MANAGEMENT OBJECTIVES:** The objective for management of the Greater Sand Dunes ACEC would be to preserve and protect the integrity of their unique values for future use and enjoyment, including the unusual geological features associated with the sand dunes and the Boar's Tusk, and the geological and biological interrelationships supported by the dunes, especially the Steamboat desert elk herd, mule deer herd, and other dependent plants and animals.

**MANAGEMENT ACTIONS:** The Sand Dunes ACEC boundary would be modified to include only that portion within the Buffalo Hump and Sand Dunes wilderness study areas (25,250 acres). However, to insure consistency with existing environmental documents, management actions and restrictions would still be applied to the 16,390 acres in the Greater Sand Dunes area that would be outside the ACEC boundary.

#### General Area

The ACEC and adjacent 16,390 acres would be managed for Class II and Class III visual values, respectively. Where oil and gas development would be likely to occur, these areas would be managed for Class III visual values. Management actions on the lands classified as VRM Class II lands would be designed to blend into the natural landscape and retain the existing character of the landscape. Management actions on the lands classified as VRM Class III lands would be designed to partially retain the existing character of the landscape.

The visual impacts of existing facilities (e.g., producing wells) would be evaluated and, to the extent reasonable, the impact mitigated.

Any surface disturbing activities within the Wasatch and Green River Formations would require a paleontological clearance.

Livestock grazing would continue at established grazing levels. Monitoring of grazing use within the allotments to ensure utilization maintenance and improvement of the vegetative resource would occur. Key plant

species utilization would not exceed 50 percent of the total annual growth.

Maintenance and use of existing necessary range-land improvements would be allowed. Proposed range-land improvements must be part of an allotment management plan, be consistent with the management objectives for the ACEC and adjacent 16,390 acres, and have an environmental assessment prepared which considers the authorization of rangeland improvement construction and/or maintenance, and the use of motor vehicles, motorized equipment, and mechanical transport.

Materials used for new or existing improvements must harmonize with the natural character of the area to reduce the impact of artificial objects on the natural environment.

Wild horse use in the ACEC and adjacent 16,900 acres would be managed as part of the natural ecosystem and would be consistent with the Divide Basin Wild Horse Management Plan and ACEC objectives. No traps would be constructed in the entire area.

To support the diversity of wildlife species occurring within the ACEC, wildlife habitat would be protected, maintained, and enhanced. Crucial winter range in the ACEC area would be maintained as an essential component to the Steamboat Mountain-Sands elk herd. However, seasonal restrictions for restrictions in big game winter range would not be applied (Table 2-26 and Table 2-10).

Habitat improvement projects on the ponds for bird, amphibian, and mammal use would be developed after habitat condition and suitability were determined, to fully ascertain the level of use and potential for improvement.

Interpretive materials and educational programs including a wildlife picture brochure would be developed to describe the wildlife and cultural resource values of the 25,250-acre ACEC.

Native vegetation would be maintained and protected to allow natural succession to continue free from unnecessary surface disturbance. Revegetation of disturbed areas with big sagebrush and other adapted shrub seeds would be required where appropriate to help improve big game habitat.

A diversity of non-motorized recreation uses, including hiking, bird-watching, photography, sightseeing, and hunting, would be encouraged. No new recreation facilities would be developed. Two roads would be

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designated as part of the Tri-Territory backcountry byway (see Map 20). Camping would be restricted to the BLM 14-day limit, and subject to "Pack In-Pack Out" requirements for trash, etc. (see Recreation Resource Management for this alternative).

### Western Portion

The Western Portion is that portion of the Greater Sand Dunes area proposed for ACEC designation.

Management of the ACEC included in Buffalo Hump and Sand Dunes WSAs (25,250 acres in the western portion of the ACEC) is guided by the "Interim Management Guidelines for Lands Under Wilderness Review." Wilderness management would not be addressed unless management of the area is more stringent than either the interim management policy or wilderness policy.

The ACEC and the area within ½ mile (55,490 acres) or the visual horizon of the ACEC would be an avoidance area for new rights-of-way; in particular, large kilovolt powerlines would be routed around this area. Prescribed oil and gas development for the Easter Portion is excluded from this restriction.

The 25,250-acre of the ACEC would be closed to motorized vehicle travel, including over-the-snow-vehicles, to maintain the unique naturalness, solitude, and primitive and unconfined recreational opportunities.

This portion would remain closed to oil and gas leasing (Table 2-26) and geophysical exploration (25,250 acres).

The ACEC (25,250 acres) would be closed to mineral material sales and to the location of mining claims and withdrawals would be pursued as necessary (Table 2-6).

About 4,360 acres that are in the coal potential area would be unsuitable for further consideration for coal leasing.

Lands would be acquired through exchange to improve the manageability of the area (1,920 acres).

### Eastern Portion

The Eastern Portion is that portion of the Greater Sand Dunes ACEC outside the ACEC.

The eastern portion of the ACEC (about 16,390 acres) would be open: 1) to mineral leasing and devel-

opment activities, subject to constraints to protect ACEC values; 2) for further construction and development and surface occupancy; 3) for additional producing wells or temporarily shut-in wells provided the number would not exceed four wells per section; and 4) to geophysical activities including vehicular travel (provided resource protection would be ensured and actions conform with the ORV plan).

Development activities would be designed to allow continued access to or use of developed and semi-developed recreation sites.

Approximately 9,840 acres with coal potential would be closed to surface mining and surface facilities. Leasing and subsurface mining for coal could occur.

Reserve pits would be lined with a 12 mil or thicker synthetic liner to protect surface water, soils, and shallow aquifers. The liner would be left in place following well drilling and reclamation. The use of ponds as water sources for development activity (e.g., well drilling) would not be allowed.

All new pipelines and powerlines within the existing area of development would be buried adjacent to access roads or in existing concentration areas. All new pipelines within the stabilized dune areas would be installed on the ground as surface lines to avoid unnecessary disturbance of vegetation. Powerlines would be buried. Existing surface pipelines would be monitored by the oil and gas operators and those exposed pipe segments, which could be hazardous to ORV users, would be marked to improve visibility.

Abandoned pipelines, unnecessary facilities (e.g., snow fence), etc., would be removed in unstabilized dune areas.

In cooperation with the oil and gas operators, a recreation user map would be developed that shows the locations of aboveground facilities (e.g., pipelines, well production facilities, snow fences, etc.).

Surface disturbances would be allowed in the vicinity of developed and semi-developed recreation sites, including parking lots.

Within the 10,390 acres of active sand dune, areas would be closed off-road vehicle travel/dune buggy and over-the-snow vehicle use where four or more wells per 640 acres occur (approximately eight sections, 5,000 acres). Within the 6,000-acre stabilized dunes, off-road vehicle travel would be limited to existing roads and trails.

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### Crookston Ranch and Boar's Tusk

Crookston Ranch and the Boar's Tusk (130 acres) would be closed to surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-26 and Table 2-5); to surface coal mining activities and any related facilities associated with mining; to mineral material sales, and to the use of explosives and blasting. Additionally, the area within a 1/2 mile radius of Boar's Tusk would be closed to blasting and explosive charges (about 500 acres).

Crookston Ranch and the Boar's Tusk (130 acres) would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

Off-road vehicle use would be limited to existing roads and trails around these two sites.

Maximum fire suppression activity would be used to protect the standing historic structures at Crookston Ranch.

### Monument Valley Area (64,300 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Monument Valley Area (64,300 acres) would be to continue to manage the area for multiple use and not as an ACEC or special management area, allowing development and public use with necessary consideration and protection of wildlife, geologic, raptors, cultural, watershed, scenic, and scientific values.

**MANAGEMENT ACTIONS:** The Monument Valley area would not be designated an ACEC.

The wilderness study area acreage will not be identified for specific management unless the management is more stringent than either the interim management policy or wilderness management.

The area would be open to: 1) location of mining claims and 43 CFR 3809 regulations would apply (the oil shale withdrawal would be revoked); 2) to consideration for mineral leasing, exploration, and development provided mitigation could be applied to retain the resource values (Table 2-10 and Table 2-26); 3) to consideration for mineral material sales with the same constraints applied all surface disturbing activities; and 4) allow development and public use with necessary consideration for wildlife, raptors, cultural, watershed, and scientific values.

The standard requirements for protection of paleontological resources would apply. The standard Section 106 process would apply for cultural resource management.

Surface disturbing activities, including rights-of-way would be managed to avoid slopes greater than 25 percent and highly erosive areas and raptor nesting areas unless a plan could be developed to mitigate adverse affects to the resource values. Raptor seasonal constraints would apply.

Off-road vehicle use would be limited to existing roads and trails. Visual resources would be managed for Class III and Class IV values. Actions in Class III areas (54,200 acres) would be designed to partially retain the existing character of the landscape. Management actions on the lands classified as VRM Class IV could result in a major modification (10,100 acres). No recreation sites would be developed; however, extensive interpretive signing would be completed.

Construction of wild horse traps and livestock improvements would be allowed provided objectives for the area could be met.

### Natural Corrals ACEC (1,276 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Natural Corrals ACEC would be to protect the cultural, historical, recreational, and geological values within the area. Other resource actions would comply with the objectives, including any restrictions required to protect the values of the ACEC.

**MANAGEMENT ACTIONS:** The Natural Corrals ACEC would be retained.

The entire ACEC would be open to consideration of oil and gas leasing.

Only Section 18 (640 acres) would be closed to surface disturbing activities that could adversely affect ACEC resources (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-26 and Table 2-5); to surface coal mining activity and related facilities due to conflicts with raptor nests, sites on the National Register of Historic Places, and conflicts with crucial range for deer and elk; and to mineral material sales.

The existing withdrawal would be retained, closing 357 acres to the location of mining claims (Table 2-6). The public water reserve withdrawal in Section 12 would be revoked in the future since the land is now patented.



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A filing for a water right would be pursued if it is deemed important.

The 20-acre NRHP site would be closed to geophysical activities.

Section 12 would be open to: surface disturbing activities provided they could be mitigated (raptor nesting restrictions would apply to surface disturbing activities); to mineral material sales; and to further consideration for coal leasing and development (surface and subsurface), provided conflicts with raptor nests and conflicts with crucial range for deer and elk would be mitigated.

The ACEC would be open to consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the resources. Activities would be designed to increase public awareness of the significance of the area.

Cultural resource values would be protected within the ACEC by limiting activities (e.g., surface disturbing uses) that would adversely affect the cultural resources and by increasing public awareness of the significance of the area.

The existing road/trail from the spring located in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$  of Section 18 and the designated archeological NRHP site (20 acres) would remain closed to vehicle use. Off-road vehicle use in the remainder of the area would be managed as limited to existing roads and trails. The ACEC would be open to over-the-snow vehicles.

Prescribed management actions for livestock grazing would include continuous monitoring, establishing riparian objectives, and obtaining cooperative riparian management. The wild horse herd management prescription would consist of monitoring to ensure resources would be protected.

In conformance with the ACEC objectives, the various recreational activities such as camping, picnicking, winter sports, hunting and fishing opportunities that occur in the area would be developed, maintained, preserved, or enhanced to provide for an optimum and satisfying visitor experience. Camping would be restricted to 14 days. A "Pack In-Pack Out" policy would apply for camping. Camping around the spring would be restricted. The area would be managed for Class IV visual resource values.

### Oregon Buttes ACEC (3,450 acres)

**MANAGEMENT OBJECTIVES:** The objective for management of the Oregon Buttes ACEC would be to protect and manage the scenic integrity as a historic landmark. In addition, this ACEC would serve to protect the significant wildlife values that are found in the area.

**MANAGEMENT ACTIONS:** The Oregon Buttes ACEC would be retained.

A portion of the ACEC is within the boundaries of a WSA. Wilderness management, recommendations, and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The wilderness study area acreage will not be identified for specific management unless the management is more stringent than either the Interim Management Policy or wilderness management.

The area would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-26 and Table 2-5); to mineral material sales for sand, gravel, or other types of construction or building materials; and to off-road vehicle travel, including those utilized for seismograph operations.

The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area. Seasonal restrictions for raptors and big game parturition areas would apply (Table 2-10).

The Oregon Buttes area would be managed under the prescriptions for VRM Class II values. Management actions would be designed to blend into the natural landscape and retain the existing character of the landscape.

### Pine Springs ACEC (90 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Pine Springs ACEC would be to enhance protection of cultural, historic, and prehistoric resource values.

**MANAGEMENT ACTIONS:** The Pine Springs ACEC would be retained.

The 90-acre area would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development;

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construction of roads, pipelines, powerlines; etc.) (Table 2-26 and Table 2-5); to mineral location and the existing withdrawal would be retained (Table 2-6); to mineral material sales for sand, gravel, or other types of construction or building materials; to off-road vehicle travel; to all geophysical activities; and to explosive charges and blasting.

The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area; maintenance of the existing spring development; and additional spring developments if the action would be in conformance with cultural values.

The area would be managed for Class III VRM values, and management actions on the lands classified as VRM Class III lands would be designed to partially retain the existing character of the landscape.

### Red Desert Watershed Area (481,930 acres)

**MANAGEMENT OBJECTIVE:** The management objective for the Red Desert Watershed Area would be to continue to manage the area (481,930 acres) for multiple use and not as a special management area. Emphasis would be placed on commodity production (e.g., mineral and recreation development). Resource prescriptions and objectives throughout this alternative would apply (Map 46).

**MANAGEMENT ACTIONS:** The boundary that would be considered the Red Desert Watershed Area would include public lands within the Great Divide Basin in the Green River planning area.

A portion of the Red Desert Watershed Area encompasses 93,000 acres of six WSAs (Alkali Draw, Alkali Basin-East Sand Dunes, Honeycomb Buttes, Oregon Buttes, Red Lake, and South Pinnacles). Wilderness management recommendations and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The Resource Management Plan would not address wilderness recommendations or management prescriptions for the WSAs. The wilderness study area acreage would not be identified for specific management unless the management is more stringent than either the interim management policy or wilderness management.

Mineral exploration and development, surface disturbing activities, and seismic activities would continue where acceptable subject to the management guidelines provided in the Minerals section. Approximately

2,500 acres would be closed to surface disturbing activities to protect candidate plant species, and ACEC values in Oregon Buttes. Surface disturbing activities would be required to follow the seasonal restrictions for protection of raptors shown in Table 2-10 and Table 2-26. The exception criteria described in Appendix 7-1 would apply.

Approximately 46,735 acres could be developed for coal (see Coal Decisions). Most of the area would be open to consideration for oil and gas leasing, and salable locatable minerals activities. The existing coal and stock driveway withdrawals would be revoked.

Rights-of-way would be allowed in conformance with area objectives. Overhead powerlines would be permitted.

The area would be managed for visual resource classes III and IV values. Visual surveys (inventories) prior to development projects would not be required.

Off-road vehicle travel would be managed to provide opportunities in conformance with other resource objectives. Approximately 93,000 acres would remain closed to ORV travel; 248,060 acres would be limited to existing roads and trails. Recreational activities would be developed, maintained, or enhanced. A Tri-Territory Loop backcountry byway would be established.

Forage would continue to be provided for wild horses in the area. Vegetation resources would be managed for continued livestock grazing and wildlife uses in accordance with the management objectives for those resource values. Objectives would be outlined in AMPs, HMPs, and wild horse herd management plans.

Candidate plant species, cultural resource sites such as the South Pass Historic Landmark, ACEC values in Oregon Buttes, Greater Sand Dunes, and Cedar Canyon would be protected. Specific management prescriptions for those areas may be found in the particular special management area section of this document.

### South Pass Historic Landscape (87,580 acres)

**MANAGEMENT OBJECTIVES:** The management objective for the area would be to manage the area to protect the visual and historical integrity of geographic features and historic trails and surrounding viewscape.

**MANAGEMENT ACTIONS:** The 87,580-acre South Pass Historic Landscape area would not be designated an ACEC.



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The South Pass Historic Landscape would encompass the viewshed along the Oregon and Mormon Pioneer trails and south of the trail to include the major landmark features of Oregon Buttes and Continental Peak (Map 46).

The area would be managed in conformance with cultural and historical objectives to protect historic values and visual resources. The scenic values of the Highway 28 visual corridor (3 linear miles) would be protected.

Within 1/4 mile or the visual horizon (whichever is less) of any contributing trail segment (about 8.5 miles) would be considered an avoidance area for surface disturbing activities; however, development activities such as roads, pipelines, and powerlines could be considered to cross trails in areas where previous disturbance has occurred and the trail has lost its National Register characteristics and would no longer be considered a contributing segment to a trail.

Vehicles used for geophysical exploration, or similar activities, could cross and drive down the trails, provided a site specific analysis determines that no adverse effects would occur. Geophysical activities up to 300 feet of the trails could be considered provided a site specific analysis determines that visual intrusions and adverse effects would not occur; however, actual geophysical activity such as vibroseis, explosives, blasting, or drilling could not occur directly on the trails.

About 46,180 acres of the area would be open to: 1) mineral leasing and development activities, subject to constraints to protect historic values; 2) activities that would conform with visual resource management classifications and prescriptions and consider the affects to visual resources; 3) geophysical activities (i.e., activities causing surface disturbance, vehicular travel, etc.) provided resource protection would be ensured; 4) the consideration of mineral material sales with restrictions to protect area values; and 5) mineral location. Off-road vehicle travel would be limited to existing roads and trails.

Management of the area included in three WSAs, the Oregon Buttes, Honeycomb Buttes, and White Horse Creek WSAs (41,400 acres in the southern portion of the area) is guided by the Interim Management Guidelines for Lands Under Wilderness Review. Wilderness management would not be addressed unless management of the area is more stringent than either the Interim management policy or wilderness policy. This part of the area would be closed to motorized vehicle travel, including over-the-snow-vehicles to maintain the unique natu-

ralness, solitude, and primitive and unconfined recreational opportunities. This portion would remain closed to oil and gas leasing (Table 2-26), mining claims, and geophysical activities.

No visible disturbance would occur within the boundary of the South Pass Historic Landmark (the historic landmark of the actual South Pass geographic location about 5,260 acres) and activities would be managed to avoid the 5,260-acre landmark. The actual boundaries would be determined during activity planning. Off-road vehicle travel would be limited to existing roads and trails.

Activities would conform with Class III VRM area prescriptions. Management actions on the lands classified as VRM Class III lands would be designed to partially retain the existing character of the landscape. Intrusions would be allowed within the Highway 28 visual corridor within the guidance of Class III VRM areas.

The exact boundaries of the landscape would be determined during activity planning.

The Oregon Buttes ACEC would be retained as an ACEC (see the section on the Oregon Buttes ACEC).

### Steamboat Mountain Area (43,010 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Steamboat Mountain Area would be to provide suitable habitat to maintain the continued existence of the Steamboat elk herd (Map 46).

**MANAGEMENT ACTIONS:** The Steamboat Mountain Area would not be designated as an ACEC.

The Steamboat elk herd area would be managed for various resource uses. No special seasonal stipulations or other restrictions would be placed on activities occurring in crucial elk winter ranges or parturition areas.

The area would be open to oil and gas leasing, mineral material sales, mineral location and development, rights of way, and other surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (Table 2-26 and Table 2-5).

Approximately 9,500 acres of lands with coal potential within the Steamboat Mountain area would be available for surface and subsurface coal mining activities with a plan of development assuring adequate measures would be taken to protect and maintain the elk

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herd. All existing and proposed above ground facilities would be landscaped or painted to harmonize with the natural landscape.

Off-road vehicle travel would be limited to existing roads and trails. The May 1-July 1 seasonal closure for off-road vehicle travel currently in effect would not apply unless resource damage occurs.

The area would be managed for Class III visual values. Management actions on the lands classified as VRM Class III lands would be designed to partially retain the existing character of the landscape.

Geological and ecological features would be managed for multiple uses.

Vegetation management including forest management activities, would be designed to maintain big game forage and cover requirements. Fire activities would be designed to meet these activities. Dead standing trees would be managed under the "Animal Inn" program to help maintain biological diversity. Reseeding and reforestation within the proposed ACEC would be done with native species.

Any additional forage that becomes available would be allocated for livestock use as first priority to improve quality and quantity of forage. Wild horse herds would continue to be maintained within wild horse management population objectives.

No special prescriptions would apply to the overlapping elk crucial wintering and parturition areas (30,000 acres) outside of the Steamboat Mountain area.

### Tri-State Monument Area (131,780 acres)

The Tri-State Monument area consists of the Currant Creek/Sage Creek watersheds and the existing Red Creek ACEC.

**MANAGEMENT OBJECTIVE:** The management objective of the Tri-State Monument area would be to maintain watershed values.

**MANAGEMENT ACTIONS:** The Currant Creek/Sage Creek watersheds would not be designated an ACEC for Colorado River cutthroat trout and watershed values. The existing Red Creek ACEC would be retained (55,880 acres).

### General Area

The actions listed under this general heading apply to all portions of the Tri-State Monument Area unless otherwise noted.

The area would be open to consideration of mineral leasing and mineral material sales, subject to the surface use restrictions. Those areas currently not under a withdrawal would be open to mineral location.

The area would be open to surface disturbing activities provided a plan could be developed to mitigate affects to watershed and water quality values, slopes, wintering wildlife, parturition areas, sage grouse, and raptors. The area would be open for consideration of activities such as fencing, interpretive signs, barriers, or sediment structures to meet resource objectives.

About 9,650 acres that are in the coal potential area would be open to coal mining by surface and subsurface mining methods.

The area would be open for consideration of activities such as fencing, interpretive signs, barriers, or sediment structures to meet resource objectives.

The area would be limited to existing roads and trails for off-road vehicle travel, and transportation planning would be done.

Camping would be allowed provided no damage to water quality and fisheries values occurs.

Fire suppression would be limited to containment at ridgetops around Currant Creek. Firefighting equipment would be limited to existing roads and trails. Fires in timber stands would be suppressed immediately.

Vegetation treatments including those along the inner gorges of intermittent and ephemeral drainages would be allowed to meet livestock objectives.

The existing levels of use for livestock grazing and timber harvest would be maintained. Riparian areas would be improved. The maximum amount of vegetation treatment resulting in converting sagebrush to grass communities would be accomplished. Some sediment structures would be constructed.

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### Currant Creek Drainage (23,740 acres)

**MANAGEMENT OBJECTIVE:** The Currant Creek drainage would be managed to maintain the existing habitat for Colorado River cutthroat trout.

**Management Actions:** Currant Creek would not be designated as a part of a Tri-State Monument ACEC.

Surface disturbing restrictions would apply (Table 2-10). Exception from the raptor seasonal restrictions may be approved if conditions described in Appendix 7-1 apply. he area would be open to sodium prospecting (Table 2-11).

The drainage would be open for those management actions or facilities that would facilitate management of the area.

Off-road vehicles would be limited to existing roads and trails.

### Sage Creek Portion

**MANAGEMENT OBJECTIVES:** The Sage Creek watershed would be managed to maintain the watershed values.

**MANAGEMENT ACTIONS:** The Sage Creek Watershed (52,670 acres) would not be designated as part of the Tri-State Monument ACEC.

The drainage would not be an avoidance area for rights-of-way (Table 2-5).

Off-road vehicle travel would be limited to existing roads and trails.

### Red Creek ACEC (55,880 acres)

**MANAGEMENT OBJECTIVE:** The management objective of the area would be to improve and/or enhance watershed values. This would include improving vegetation composition and water quality and channel stability. All resource uses would be managed in support of watershed objectives.

**MANAGEMENT ACTIONS:** The existing Red Creek ACEC would be retained.

A portion of the Red Creek ACEC is within the Red Creek Wilderness Study Area (8,020 acres). Wilderness management recommendations and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The wilderness study area acreage will not be

identified for specific management unless the management is more stringent than either the Interim Management Policy or wilderness management.

The 8,020 acres of the ACEC would be closed to motorized vehicle travel, including over-the-snow vehicles to maintain the unique naturalness, solitude, and primitive and unconfined recreational opportunities.

This portion would remain closed to oil and gas leasing (Table 2-26), mining claims, and geophysical activities.

The remaining acreage in the Red Creek ACEC would be managed as an avoidance area for surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) to protect its natural values. Activities could occur provided a plan could be developed to mitigate affects to watershed and water quality values, slopes, and raptors (Table 2-26 and Table 2-10). Exception from the raptor seasonal restrictions may be approved if conditions described in Appendix 7-1 apply. Rights-of-way would be managed to avoid the area as indicated on Table 2-5.

The area would be open to consideration of mineral leasing and mineral material sales. Those areas currently under a withdrawal would be opened to mineral location.

Off-road vehicle travel would be limited to existing roads and trails.

### White Mountain Petroglyphs ACEC (20 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the White Mountain Petroglyphs ACEC would be to protect cultural resource values from degradation and provide for wildlife and scenic values and Native American concerns. Public awareness and use of the area as an educational site would be encouraged.

**MANAGEMENT ACTIONS:** The White Mountain Petroglyphs ACEC would be retained.

The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

The ACEC would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table

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2-26 and Table 2-5); to the location of mining claims (and the existing withdrawal retained); to mineral material sales for sand, gravel, or other types of construction or building materials; and to the use of fire retardant chemicals containing dyes.

Off-road vehicle travel, including those used for geophysical exploration and fire suppression activities, would be limited to existing roads and trails, (Table 2-28).

The ACEC would be managed for Class IV visual resource values. Management actions on the lands classified as VRM Class IV lands could result in a major modification to the landscape.

Human activity, recreation use, etc., would be restricted from February 1 through July 31 to protect nesting raptors. Exception from this restriction may be approved if conditions described in Appendix 7-1 apply.

### Wild and Scenic Rivers Management

**MANAGEMENT OBJECTIVE:** The objective for management of wild and scenic rivers would be to protect wild and scenic river values until Congress makes a determination for inclusion into the National Wild and Scenic Rivers System.

**MANAGEMENT ACTIONS:** The portion of the Green River administered by BLM did not meet the suitability criteria based upon the inability of the BLM to manage the area because of lack of jurisdiction. However, it would be recommended that a cooperative study between BLM, BOR, and USFWS be conducted to determine eligibility and suitability.

### Interim Management, Wild River Segments

Interim management of wild river segments would protect the wild values of the segments. Resource management objectives would protect the primitive and pristine values. Only those activities that conform with the objectives would be allowed. Intrusions would not be allowed.

Temporary cultural and paleontology activities (e.g., recordation, sampling, testing, stabilization, rehabilitation, and reconstruction) may be permitted to the extent that no permanent impacts occur to river related values.

Fires would be suppressed by "light-on-the-land" techniques. No mechanized equipment would be used to suppress fires. Chainsaws and helicopter bucket drops may be allowed if no permanent impacts occur to river values.

No timber cutting, including firewood and post/pole cutting, would be permitted within the ¼ mile corridor.

No increase in existing livestock grazing AUMs and no new grazing permits nor range improvements would be permitted.

No lands disposals would occur. Exchanges could be allowed for acquiring private and/or state lands within the ¼ mile corridor or between river segments; however, no BLM-administered lands within the corridor may be exchanged.

The ¼ mile corridor would be an avoidance area for surface disturbing rights-of-way.

No mineral exploration, leasing, or development would be allowed within ¼ of centerline of the river. Existing leases should be allowed to expire.

No new locatable mineral mining claims would be allowed within ¼ mile of centerline. A withdrawal from the exploration and development of locatable minerals would be pursued. No recreational dredging for minerals such as gold would be allowed. Valid existing rights (existing mining claims) would be recognized.

Geophysical exploration would be limited to foot access and placement of surface cables. No vehicles would be allowed. Surface charges may be allowed if a site specific analysis determines no adverse impacts would occur to river values.

No surface occupancy for disturbing activities would be allowed within ¼ mile of the centerline.

No recreational development such as new campgrounds, put-in or take-out areas, or other such facilities would be allowed. No motorized vehicles would be allowed within the ¼ mile corridor. Hiking trails may be built if there would be a demand for them. Mountain biking would be allowed to the extent that activities do not damage or denigrate river related values. Hikers would be required to "pack it out"; there would be no garbage facilities. Campfires would be permitted in keeping with existing fire management regulations. Hunting and fishing would be permitted.

No vegetation treatment or manipulation may occur other than hand or aerial seeding of native species done to restore natural vegetation.

The ¼ mile corridor would be managed to protect visual values.



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The segment would be visited once a year when hiking access is possible.

No water impoundments or diversions would be permitted.

No wildlife habitat improvements would be allowed within the ¼ mile corridor.

### Interim Management, Scenic River Segments

Interim management for scenic segments would protect scenic values. Some intrusions may be allowed if they are not readily evident and would not adversely affect scenic values.

Temporary cultural and paleontology activities (e.g., recordation, sampling, testing, stabilization, rehabilitation, and reconstruction) may be permitted to the extent that no permanent impacts occur to river related values.

Fires would be suppressed by "light-on-the-land" techniques. No mechanized equipment would be used to suppress fires. Chainsaws and helicopter bucket drops may be allowed if no permanent impacts occur to river values.

No timber cutting, including firewood and post/pole cutting, would be permitted within the ¼ mile corridor.

No increase in existing livestock grazing AUMs. Improvements would only be allowed if they would be compatible with scenic river values.

No lands disposals would occur. Exchanges could be allowed for acquiring private and/or state lands within the ¼ mile corridor or between river segments; however, no BLM-administered lands within the corridor may be exchanged.

No mineral exploration, leasing, or development would be allowed within ¼ of centerline of the river. Existing leases should be allowed to expire.

A plan of development would be required for all locatable mineral activity. No recreational dredging for minerals such as gold would be allowed. Valid existing rights (existing mining claims) would be recognized.

Geophysical exploration would be allowed if a site specific analysis determines no adverse affects would occur to scenic river values. Vehicles would use existing approved roads and trails only. Foot access would be required off of existing roads. Use of surface charges could be allowed if the site specific analysis determines that no adverse impacts would occur to the river values.

Surface disturbing activities could be allowed within ¼ mile of the centerline. All surface disturbances must be compatible with river values. An approved plan would be required prior to any disturbance.

Only those recreation developments that would conform with scenic river values would be allowed. Put in or take out areas could be allowed. Motorized vehicles would be restricted to using existing roads and trails only within the ¼ mile corridor. Hiking trails may be built if there were a demand for them. Mountain biking would be allowed to the extent that activities do not damage or denigrate river related values. Hikers would be required to "pack it out"; there would be no garbage facilities. Campfires would be permitted in keeping with existing fire management regulations. Hunting and fishing would be permitted.

No vegetation treatment or manipulation may occur other than hand or aerial seeding of native species done to restore natural vegetation.

The ¼ mile corridor would be managed to protect visual values.

The segment would be visited once a year when hiking access is possible.

No water impoundments or diversions would be permitted.

Wildlife habitat improvements would only be allowed if they would be compatible with scenic river values.

### Interim Management, Recreational River Segments

Interim management for recreational segments would protect recreational values. Some intrusions may be allowed if they would not adversely affect recreational values.

Cultural and paleontology activities would be allowed if they would be compatible with recreation river values.

Fires would be suppressed using appropriate techniques if no permanent impacts occur to recreation river values.

No commercial timber or post/pole cutting would be allowed within the ¼ mile corridor. Firewood cutting for campfires within the corridor would be permitted.

No increase in existing livestock grazing AUMs. Improvements would only be allowed if they would be compatible with recreation river values.

## ALTERNATIVES

No lands disposals would occur. Exchanges could be allowed for acquiring private and/or state lands within the ¼ mile corridor or between river segments; however, no BLM-administered lands within the corridor may be exchanged.

Subject to existing regulations, new minerals leasing, exploration, and development would be allowed in the river corridor if recreational values would not be adversely affected.

A plan of development would be required for all locatable mineral activity. No recreational dredging for minerals such as gold would be allowed. Valid existing rights (existing mining claims) would be recognized.

Geophysical exploration would be allowed if site specific analysis determines no adverse effects would occur to recreation values. Vehicles would use existing roads and trails only. Foot access would be required off of existing roads. Use of surface charges would be allowed if site specific analysis determines no adverse effects would occur to recreation values.

Subject to existing regulations, surface disturbing activities would be allowed in the river corridor if site specific analysis determines no adverse effects would occur to recreation values.

New recreation developments or improvements to existing campgrounds could occur. Recreation use would be encouraged to the extent consistent with protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance recreation river values.

No vegetation treatment or manipulation may occur other than hand or aerial seeding of native species done to restore natural vegetation.

The ¼ mile corridor would be managed to protect visual values.

The segment would be visited monthly when driving or snowmobile access is possible.

No water impoundments or diversions would be permitted.

Wildlife habitat improvements would be allowed if they would be compatible with recreation river values.

### Green River

Consider a joint effort with the Bureau of Reclamation and U.S. Fish and Wildlife Service to review the Green

River for potential wild and scenic river characteristics. Cooperate on the formation and management of a greenbelt area.

## ALTERNATIVE C

This alternative allows for the maximum protection and enhancement of wildlife, wild horse, air, riparian, vegetation, and watershed resources. Other activities would be allowed provided the initial goals of this alternative can still be met.

### Air Quality Management

**MANAGEMENT OBJECTIVE:** The objectives for management of air quality would be to maintain and where possible enhance present air quality management levels; to protect public health and safety and sensitive natural resources; and within the scope of BLM's authority, minimize emissions which may add to acid rain, cause violations of air quality standards, or reduce visibility.

**MANAGEMENT ACTIONS:** A specific study would be initiated to assess visibility and collect data. Special requirements would be applied on a case-by-case basis to alleviate air quality problems.

Plant facilities would be located where they would not significantly degrade air quality over the Flaming Gorge National Recreation Area; or cause heavy fog conditions that would be significant hazards to public health, such as black icing of major highways, or such as extreme and continual fog that could inhibit transportation or recreation activities.

All trona or coal ore or product shipment would be done in covered trucks or rail cars.

BLM would cooperate with DEQ on TSP standards and visibility standards and would encourage DEQ to apply visibility regulations beyond Clean Air Act Class I areas. BLM would cooperate with Wyoming DEQ on review of air quality regulations which could impact BLM-managed activities.

Surface disturbing activities would be managed to not violate air quality regulations (Appendix 5-2).

BLM would coordinate with local and state agencies to control dust on unimproved dirt roads. Road binding agents would be applied on all major or heavily utilized access roads. Vegetation on backslope and barrow areas would be maintained.



## ALTERNATIVES

See other resource management prescriptions in this document for other restrictions that may apply to air quality management activities.

### Candidate Plant Species Management

**MANAGEMENT OBJECTIVES:** The objectives for management of plant species that are candidates for listing as threatened or endangered would be to prevent destruction or loss of the plant species communities and important habitat and to provide opportunities for enhancing or expanding the habitat.

**MANAGEMENT ACTIONS:** Known locations of candidate plant species communities (44 locations, about 3,110 acres, see Map 4) would be closed to: 1) surface disturbing activities that could adversely affect the candidate plant species and their habitat (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see Lands and Realty Management and Minerals Management); 2) the location of mining claims (withdrawal from mineral location would be pursued); 3) mineral material sales; 4) the use of explosives and blasting; 5) off-road vehicular travel including those used for geophysical exploration activities; 6) oil and gas leasing or any other surface mining mineral activities or related facilities; and 7) fire suppression other than use of existing roads and trails.

The known plant and potential habitat areas would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the plant species.

Any federally controlled management actions on potential habitat of candidate plant species communities on federal surface and on private surface with federal mineral (about 39,320 acres) would be closed to surface disturbing activities that could adversely affect the candidate plant species and their habitat (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see Lands and Realty Management and Minerals Management); to the location of mining claims (withdrawal from mineral location would be pursued); to mineral material sales; to the use of explosives and blasting; to off-road vehicular travel including those used for geophysical exploration activities; to activities listed above where candidate plants and important habitat are located; and to fire suppression other than use of existing roads and trails.

Searches prior to projects and activities would be required in areas of potential habitat. Potential habitat areas would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the plant species.

See other resource management prescriptions in this document for other restrictions that may apply to candidate plant species management activities.

### Cultural, Natural History, and Paleontological Resource Management

**MANAGEMENT OBJECTIVES:** The objectives for management of the cultural and paleontological resources would be to: (1) expand the opportunities for scientific study, and educational and interpretive uses of cultural and paleontological resources; (2) protect and preserve the most important cultural and paleontological resources for future generations; and (3) resolve conflicts between cultural/paleontological resources and other resource uses. Of particular concern would be significant sites of historic or prehistoric human habitation, sites demonstrating unique ethnic affiliation, places having special spiritual or religious significance to Native Americans, and vertebrate fossil localities.

**MANAGEMENT ACTIONS:** Sites listed on the National Register of Historic Places (NRHP) and NRHP eligible sites would be managed for their local and national significance, under the guidelines of the National Historic Preservation Act (especially sections 106 and 110) (Appendix 6-1), the Archeological Resources Protection Act (ARPA), and the American Indians Religious Freedom Act (AIRFA) (Appendix 6-2) and to ensure unavoidable adverse effects would be properly mitigated prior to disturbance or destruction.

Appropriate level of analysis of all BLM undertakings would be conducted to determine National Register of Historic Places eligibility and potential effects to those historic properties in the area of potential effect in accordance with the National Historic Preservation Act (Appendix 6-1).

### Historic Trails

Management of the Oregon and Mormon Pioneer National Historic Trails and the Pony Express and California historic trails would provide cooperation with the National Park Service in implementation of the Comprehensive Historic Trails Management Plan for the Oregon and Mormon Pioneer National Historic Trails. Within ½

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mile or the visual horizon (whichever is less) of any contributing segment (233 miles, 149,120 acres) would be an avoidance area for surface disturbing activities (Map 5); however, development activities such as roads, pipelines, and powerlines could be considered to cross trails in areas where previous disturbance has occurred and the trail has lost its National Register characteristics and would no longer be considered a contributing segment to a trail.

Vehicles used for geophysical explorations, or similar activities, could cross and drive down the trails, provided a site specific analysis determines that no adverse effects would occur. Geophysical activities up to 300 feet from the trails could be considered provided a site specific analysis determines that visual intrusions and adverse effects would not occur; however, actual geophysical activity such as vibroseis, explosives, blasting, or drilling could not occur directly on the trails.

Management of historic roads and trails that are eligible for the NRHP but are not Congressionally designated historic trails such as the Overland Trail, the Cherokee Trail, and the Point of Rocks to South Pass Road (about 170 miles, 104,800 acres) would be recommended for listing to the National Register of Historic Places. Management prescriptions would generally be the same as those for designated trails.

Various Expansion Era (i.e., 1870-1940) trails (15 trails and approximately 800 miles) would be managed according to their historical context. Expansion Era trails are those routes developed after establishment of the Transcontinental Railroad in Wyoming in 1869. Management actions would include development of activity plans with the objective of preserving significant contributing segments (estimated at not more than 10 miles of each of the 15 trails, about 150 miles) in their natural condition and would apply the same management prescriptions applied to NRHP eligible historic trails.

The Big Sandy Station, Big Timber Station, Freighters Springs Station, Camp Carmichael, Lander's Camp, the site of the Simpsons' Gulch wagon train burning, the Eden-Farson site, and the Finley and Chicken Springs sites would be managed for the preservation of cultural and historical values. Cultural resource management plans would be developed to determine the site specific resource actions necessary.

Archaeological resources in the Little Colorado Desert, North Nitchie Gulch, and Wamsutter Arch concentrated oil and gas areas would be protected by avoiding all sites and without sacrificing significant archaeological values. Historic resources that could be eligible under NRHP

criterion (36 CFR 60 and Appendix 6-1) would not be managed according to this prescription.

Surface disturbing activities in playa lake areas (Blue Forest, 24,640 acres; Blue Point, 3,200 acres; and Adobe Town Rim, 1,280 acres) would avoid adverse affects to cultural sites.

### Rock Art Sites

Rock art sites would be managed to protect their intrinsic values. Five known rock art sites (Cedar Canyon, LaBarge Bluffs, Sugarloaf, Tolar, and White Mountain, 100 acres) would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

These rock art sites would be closed to surface disturbing activities that could adversely affect them (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (see Lands and Realty Management and Minerals Management); to the location of mining claims and withdrawals pursued as necessary (Table 2-6); to mineral material sales for sand, gravel, or other types of construction or building materials; and to the use of explosives and blasting.

The 5 known rock art sites would be closed to off-road vehicular travel including those used for geophysical exploration activities (see Off-Road Vehicle Management) and to the use of fire retardant chemicals containing dyes.

Lands within 1/4 mile radius of 22 rock art sites (11,000 acres) would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

These areas (11,000 acres) would be closed to surface disturbing activities that could adversely affect them (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see Lands and Realty Management and Minerals Management); to mineral material sales for sand, gravel or other types of construction or building materials; to the use of explosives and blasting; and to fire suppression other than use of designated roads and trails.

Off-road vehicles, including vehicles used for geophysical exploration, would be limited to existing roads and trails (see Off-Road Vehicle Management).

All other rock art sites would be managed on a case-by-case basis according to resource values.

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### Other Sites

LaCleda Stage Station, Dug Springs Stage Station, and the Pine Springs site (110 acres) would be protected and would be closed to surface disturbing activities that could adversely affect the sites (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (see Lands and Realty Management and Minerals Management) and to mineral leasing and mineral material sales.

These sites would be closed to exploration and development of locatable minerals. Withdrawals would be pursued for Dug Springs (10 acres) and LaCleda Stage Stations (10 acres); the 90-acre withdrawal in Pine Springs would be retained. Cultural resource management plans would be written for these sites as necessary.

All known human burial sites would be protected. Native American burial sites would take into account recommendations from appropriate tribes. Management of these areas and a ½ mile buffer (about 500 acres) would be closed to surface disturbing activities that could adversely affect them (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; mineral material sales; locatable mineral exploration and development; etc.) (see Lands and Realty Management and Minerals Management). Data recovery would not be the preferred method of mitigation of adverse effects to any burial location. Scientific analysis of human remains discovered during any development activity would be allowed.

The Tri-Territory Marker (10 acres) would be protected by closing it to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, mineral material sales, etc.) (see Lands and Realty Management and Minerals Management); to exploration and development of locatable minerals; and a withdrawal would be pursued. A cultural resource management plan would be prepared for the site if necessary. The area would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area.

The Parting-of-the-Ways historic site would be protected by closing it to exploration and development of locatable minerals. A 40-acre withdrawal would be maintained. Development activities such as roads, pipelines, and powerlines would be allowed to cross the site in areas where previous disturbance has occurred, and where the trail and site has lost its National Register characteristics (Map 5). The site would be subject to the

prescriptions for management of the National Historic Trails.

The Aboriginal Quarry site (160 acres) would be protected by closing the site to mineral location and pursuing a withdrawal. The site would be closed to surface disturbing activities that could adversely affect the site (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, mineral material sales, etc.) (see Lands and Realty Management and Minerals Management).

The integrity of the Dry Sandy Swales (1 mile, 20 acres) would be protected. The site would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; mineral material sales, etc.) (see Lands and Realty Management and Minerals Management). The area would be open to surface disturbing activities within the 300 acres surrounding the Dry Sandy Swales provided objectives for the area could be met and visual integrity retained (see Lands and Realty Management).

North and South Table Mountains (1,280 acres) would be managed to preserve cultural information within standard Section 106 and 110 compliance. The area would be closed to surface disturbing activities that could adversely affect the cultural sites (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, mineral material sales, etc.) (see Lands and Realty Management and Minerals Management) but would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area.

Consultation with appropriate Native American groups concerning areas of concern for spiritual and religious purposes would occur in accordance with the American Indian Religious Freedom Act.

Interpretive materials which describe the cultural resources of the area, their significance, and the bureau's responsibility toward these resources would be prepared. Historical aspects of all programs would be interpreted for public appreciation and enjoyment as appropriate.

Exchanges for acquisitions for approximately 40 acres and cooperative agreements would be pursued to enhance management of cultural resources.

Collecting of fossils may be allowed with a permit that may be issued only to an academic, scientific, governmental, or other qualified institution, individual, or consultant. Collection of common invertebrate fossils and

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petrified wood for hobby purposes may be allowed on public lands and is regulated under 43 CFR 3600, 3622, and 8365.

Surface disturbance activities that affect fossil locations would be allowed provided a site specific analysis determines that unavoidable adverse effects on these resources could be mitigated. Inventories would be required prior to disturbance. Surveys may be required on areas with potential for fossils, including outcrops of the Bridger and Washakie Formations, and the lower-most 100 feet of the Laney Member.

The Steamboat Mountain and Boar's Tusk-Killpecker Sand Dunes areas would be managed for National Natural Landmark values to protect the unique geological and ecological features to provide for public interpretation of these features. The road around Boar's Tusk would be closed.

See other resource management prescriptions in this document for other restrictions that may apply to cultural, natural history, and paleontological resource management activities.

### Fire Management

**MANAGEMENT OBJECTIVE:** The objectives for fire management would be to use prescribed fire to meet resource management objectives (such as improvement of wildlife habitat and range condition), and to suppress wildfires for the protection of resource values, property, and human life.

**MANAGEMENT ACTIONS:** Fire management activities would meet resource management objectives, protect sensitive resources and property, and protect public health and safety.

Fire suppression would be provided commensurate with resource values. Fire strategies would include confinement, containment, and control (see Glossary). Figure 2 shows the decision-making process used when dealing with fire.

Heavy equipment would not be used to suppress fires in the Pine Springs Expansion Area or in the aboriginal quarry site.

Fires around populated areas, Hickey Mountain, Pine Mountain, Little Mountain, Steamboat Mountain conifer communities, and the structures at Crookston Ranch would receive immediate suppression efforts.

Fire retardants and chemicals would not be utilized in rock art sites. Suppression activities would be designed

to protect fisheries, candidate plant areas, and other special management areas.

The sensitive cultural and historic sites would be closed to fire suppression activities other than use of existing roads and trails.

Timber stands (conifer) would be managed under the guidelines of full suppression (contain, confine, control) for wildfires.

Prescribed fire by both planned and unplanned ignition would be used as a resource management tool. Activity plans would be prepared to address specific applications in accordance with resource objectives.

Prescribed burning would be conducted so that ambient air quality standards would not be violated.

Aspen and woodland juniper would be available for consideration of a prescribed fire condition.

See other resource management prescriptions in this document for other restrictions that may apply to fire management activities.

### Forest Resource Management

**MANAGEMENT OBJECTIVES:** The objective for management of forest resources would be to manage all forest lands for watershed, wildlife, and scenic values. Silvicultural practices would be designed to meet watershed, wildlife, and visual objectives.

Noncommercial forest lands would be managed to optimize cover and enhance habitat for wildlife, protect soil and watershed values, and complement recreation uses.

**MANAGEMENT ACTIONS:** The planning area has been broken into 4 timber compartments for timber management: Wind River Front, Pine Mountain, Little Mountain, and Hickey Mountain-Table Mountain. Hickey Mountain-Table Mountain would be managed under the woodland prescriptions described in this alternative.

Harvest objectives would be regulated by watershed, wildlife, and scenic resource needs. Harvests would be defined to support wildlife, watershed, and visual resource objectives.

Forest lands would be managed under a category designed to enhance or maintain other resource values and allowable harvest would be determined by other resource values and needs. A sawtimber harvest level of no more than 500,000 board feet annually from 7,696



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acres would be considered. This volume may be reduced if wildlife cover needs to be maintained.

Commercial forest lands would be managed under a category designed to enhance or maintain other resource values. Timber harvesting would be restricted to removing trees that have been damaged or killed as a result of a natural catastrophe. Timber harvesting would also be allowed if its primary objective is to benefit wildlife, watershed, and recreation. Trees that would be a safety hazard would be removed.

A structural diversity in age classes and species (commercial conifer) to enhance wildlife habitat requirements would be achieved through timber harvesting.

The major consideration in harvesting would be to provide the stability and habitat for watershed, wildlife, and scenic values. Stand conditions and other resource considerations would dictate harvest methods and size and shape of units.

The commercial timber base would be reduced by approximately 247 acres due to a 500-foot no surface occupancy restriction along streams and standing water.

Both commercial and noncommercial forest lands would provide the local demand for minor forest products (e.g., fuelwood, posts and poles, wildlings, and Christmas trees). This use would be permitted to the extent that it would meet resource objectives.

Stand replacement of harvested areas or areas denuded by natural causes would be revegetated with tree seedlings within prescribed time periods of 5 to 15 years (fully stocked).

Woodland forests would also be managed to enhance or maintain other resource values to establish all age classes and to increase tree species diversity within the stands. Woodland forests consist of juniper, aspen, and limber pine (127,977 acres). Woodland stands would be managed mainly for watershed, dispersed recreation, scenic, and wildlife considerations.

Woodland forest acreage would be maintained and no treatment would be implemented that converts the areas to another vegetation type. Old aspen stands may be replaced by stands of sprouting aspen by various treatment (e.g., burning, etc.), or old decadent trees may be left standing or downed to provide cover for wildlife. Silvicultural treatments would be developed in mature timber stands to improve wildlife habitat and watershed condition, i.e., create small opening to provide forage for wildlife and accumulate snow drifts to increase moisture.

Tree seedlings would be re-established within these openings.

Approximately 1,436 acres of commercial conifer within big game winter ranges would be closed to logging activity from November 15 to April 30. If the logging unit occurs within the 2,662 acres of conifer in big game partition habitats, the area would be closed to timber harvest activities from May 1 through June 30. Exceptions may be approved if conditions described in Appendix 7-1 apply.

Surface disturbing activities such as roads, staging areas, etc., would not be allowed on 247 acres within 500 feet of 100-year floodplains, wetlands, or perennial streams and their associated wetlands. Surface disturbing activities would not be allowed within 100 feet of the edge of the inner gorge of intermittent and large ephemeral drainages, without an approved plan to mitigate impacts to water quality. Linear crossings would be considered on a case-by-case basis (Map 24).

From February 1 to July 31, there would be no logging activity within 2 miles of a sage grouse nesting sites and ½ mile of raptor nests (22 acres) (see Table 2-10). Exceptions may be approved if conditions described in Appendix 7-1 apply.

Cutting methods could include clearcutting, individual tree marking, shelter wood, thinning, and group selection. Clearcut units would generally not exceed 25 acres in size. All clearcuts would consider other resource values such as escape cover for wildlife. Clearcut unit size and shape would be designed to maximize natural regeneration.

All forested areas would be managed under full fire suppression. Exceptions would be prescribed burns of slash piles after logging and burning aspen stands to improve wildlife habitat. Firewood cutting would not be allowed around developed recreation sites.

Cottonwood trees would not be available for harvesting.

See other resource management prescriptions in this document for other restrictions that may apply to forest resource management activities.

## Hazardous Materials and Other Hazards

**MANAGEMENT OBJECTIVES:** The objectives for management of hazardous materials and waste would be to: 1) protect public and environmental health and

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safety on BLM-administered public lands, 2) comply with applicable federal and state laws, 3) prevent waste contamination due to any BLM-authorized actions, 4) minimize federal exposure to the liabilities associated with waste management on public lands, and 5) integrate hazardous materials and waste management policies and controls into all BLM programs.

**MANAGEMENT ACTIONS:** For BLM-authorized activities that involve hazardous materials or their use, precautionary measures would be used to guard against releases or spills into the environment.

Sale or transfer of public lands on which storage or disposal of hazardous substances has been known to occur would require public notification of the type and quantity of such substances.

BLM-administered public land sites contaminated with hazardous wastes would be reported, secured, and cleaned up according to applicable federal and state regulations and contingency plans. Parties responsible for contamination would be liable for cleanup and resource damage costs, as prescribed in federal and state regulations. If at all possible, the responsible parties would bear the financial burden of cleanup and resource damage costs.

Any produced water pit or drilling fluid pit that shows indications of containing hazardous wastes would be tested for the TCLP constituents and if analysis proves positive, the fluids would be disposed of properly. The costs of testing and disposal would be the responsibility of the operator.

If hazards should be identified, the BLM will provide appropriate warnings and establish precautions for safety hazards associated with the use of any areas on any areas on BLM-administered public lands.

See other resource management prescriptions in this document for other restrictions that may apply to hazardous materials management activities.

### Lands and Realty Management

**MANAGEMENT OBJECTIVES:** The objectives for management of the land and realty program would be to manage the public lands to support the goals and objectives of other resource programs, to respond to public demand for land use authorizations, and to acquire administrative and public access where necessary.

**MANAGEMENT ACTIONS:** The lands and realty management actions are divided into five groups.

### Land Ownership Adjustment

Public lands which have future potential for disposal have been identified in Appendix 8-1 (13,043 acres). The disposal of these lands may allow for the acquisition of important resource lands or meet other important public objectives such as community expansion and economic development.

Public lands may have further potential for disposal because they are isolated and would be difficult to manage. Priority would be given to land exchanges. All lands identified for possible disposal would be added to the BLM/State Master Exchange File (Map 7).

To prevent string development, tracts of land along Interstate Highway 80 interchanges would not be considered for disposal.

Sweetwater County School District No. 1 would be given the opportunity to acquire Lots 3,4,5, section 28, T. 19 N., R. 105 W. (124 acres) for school purposes prior to any other type of disposal.

Action would be taken to acquire lands (about 17,700 acres) by purchase or exchange to support resource needs (Appendix 8-3).

Lands would include private/state lands along the upper stream reaches of the Big Sandy River; state inholdings in WSAs; cultural/historic sites; threatened and endangered species habitat; riparian habitat; and other lands with important resource values.

### Utility/Transportation Systems

Public lands would be made available throughout the planning area for rights-of-way, permits, and leases.

The planning area, with the exception of defined avoidance and exclusion areas would be open to the granting of rights-of-way (reference ACEC and other special management area alternatives).

The ROD and *Federal Register* notice for the RMP would meet the criteria for public notification for linear or site rights-of-way as required by BLM Manual 7221. Site facilities or major linear rights-of-way along perennial streams which require an EIS would receive prior public notice unless such notice was given by another government agency (federal, state, or local).

The Aspen Mountain Communications Site Plan would govern development of sites at this location. Sites at other locations would be approved on a case-by-case basis. Sites would be shared where possible.



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Major transportation and utility line rights-of-way would be confined to established concentration areas. Areas designated as utility windows, ROW concentration areas, and existing communication sites would be preferred locations for future grants (Map 8).

Right-of-way corridors would be designated.

Windows have been identified for the placement of utilities. The northern east-west window would be for underground facilities only.

Rights-of-way and avoidance areas are described in Table 2-4 and Table 2-5 and shown on Map 47 and Map 48.

An avoidance area for major utility lines would be located along I-80 between Point of Rocks and Green River. Due to topography, congestion in the concentration area, and surface mining, this area would be restricted to local distribution service lines.

### Withdrawals/Classifications

Withdrawals would be processed to afford protection to important resource values (Table 2-6). Withdrawals which no longer serve the purpose for which they were withdrawn would be revoked.

The Multiple Use Management Classification would be revoked, as it affects public lands within the planning area (200 acres).

Prior to revocation, withdrawn lands would be reviewed to determine if any other resource values require withdrawal protection (Table 2-7; Map 11; and Map 12).

Public Water Reserves would be terminated where no longer needed, and acquired where the need exists (21,368 terminated and 9,386 acquired acres).

Withdrawals from land and mineral entry would be pursued for special management areas or lands within ACECs.

No lands would be provided for agricultural use under Desert Land Entry or agricultural lease. Lands would be managed to reduce the salinity and sedimentation of the Green River Basin.

### Desert Land Entries

All public land in the planning area would be considered unsuitable for and closed to desert land entry and

agricultural leases. In the event that an applicant can provide evidence of a water right and provide an acceptable conservation plan which protects the soil resource and prevents salinity, the application for either a DLE or for an agricultural lease would be considered on its merits. Desert Land Entries and agricultural leases must meet the criteria outlined in Appendix 8-2.

### Access

Access to public lands would be provided throughout the planning area. Access would be closed to areas to protect significant resource values.

Easements would be acquired to provide access to public lands for recreational, wildlife, range, cultural/historical, mineral, ACEC, special management area, and other resource needs (Table 2-8).

Placement of advertising signs on public lands adjacent to county roads, or roads on the BLM Transportation Plan, shall meet the criteria for sign placement on federal or state highways.

See other resource management prescriptions in this document for other restrictions that may apply to lands and realty management activities.

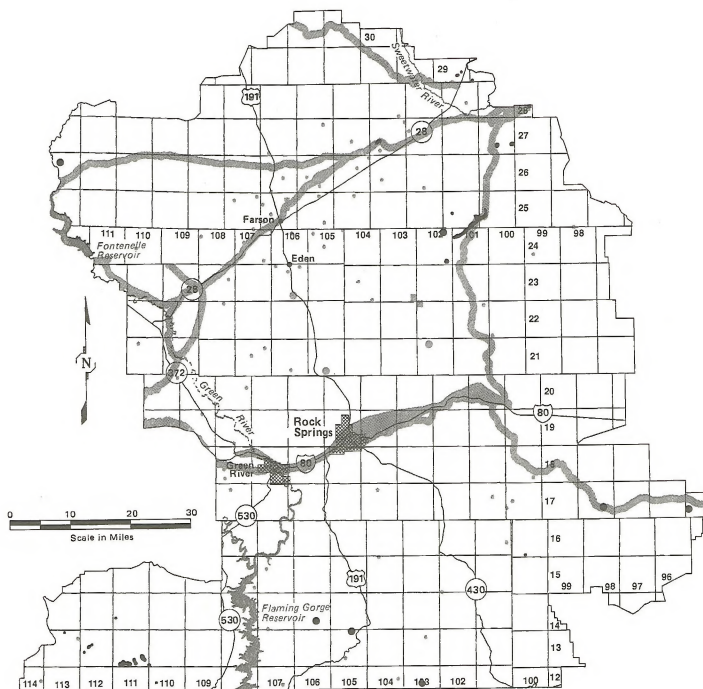
### Livestock Grazing Management

**MANAGEMENT OBJECTIVE:** The objective for livestock grazing management would be to improve forage production and ecological conditions for the benefit of livestock use, wildlife habitat, watershed, and riparian areas.

**MANAGEMENT ACTIONS:** Authorized grazing use would not exceed the recognized active grazing preference (318,647 AUMs).

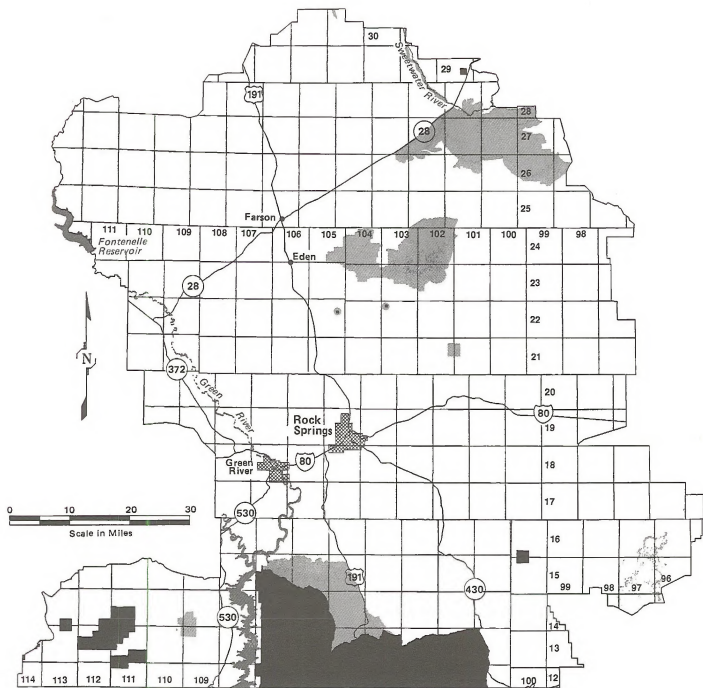
AMP development and grazing system implementation for "I" and "M" categories would be the same as described for the Preferred Alternative.



Livestock grazing would not be authorized in the 970-acre Palmer Draw area, special management enclosures, or similar special management areas. AUMs currently authorized in these areas would be suspended. All developed and semi-developed recreation areas would be closed to livestock grazing. Authorized grazing preference would be reduced in areas with excessive soil erosion and poor range condition, if allotment evaluation warrants such a change or if necessary to provide forage for wildlife, wild horse, and recreational use.



 Exclusion Area  
 Avoidance Area

Map 47  
 Alternative C  
 Rights-of-Way Exclusion  
 and Avoidance Areas  
 Green River Planning Area



 Avoidance Area  
 Exclusion Area

Map 48  
 Alternative C  
**ROW Avoidance or Exclusion Areas in  
 Special Management Areas**  
 Green River Planning Area

## ALTERNATIVES

A new allotment would be developed for the Pine Canyon, Cedar Canyon, Long Canyon, and Table Mountain areas to enhance wildlife habitat management and reduce wildlife conflicts with oil and gas development and livestock grazing.

The current authorized active livestock use and existing forage reservations for wildlife and wild horses would be maintained. Existing rangeland monitoring would continue and additional rangeland monitoring would be initiated to determine the need for forage allocation adjustment. Unallotted forage on public land (15,100 acres) scattered throughout the planning area would not be allocated to livestock. Unallotted forage would be reserved for wildlife and wild horse use or to improve watershed condition. Forage increases would be allocated to wildlife or reserved for watershed, wild horses, and recreational uses.

Management would be implemented to enhance wild horse, wildlife, watershed, and soils objectives.

Salt blocks for livestock would not be placed within 500 feet of live water, wetlands, or riparian areas, unless analysis shows that it would be acceptable.

Vegetation treatment (prescribed fire) would be used to remove decadent stands of brush in specific areas (approximately 41,000 acres). The 41,000 acres of vegetation manipulation would primarily be designed to improve wildlife habitat; however, some of the increased forage would also benefit livestock. Prescribed fire would be the preferred method of vegetation manipulation and spring burns would be preferred to regenerate shrubs. Chemical treatments would not be used for vegetation manipulation. Noxious weed control would be the same as described in the Preferred Alternative.

Water sources would not be developed in wildlife crucial winter ranges unless they would benefit wildlife habitat.

Fences would not be constructed solely to facilitate livestock management and there would be no fences constructed in big game use and wild horse herd areas. fences on public land causing documented wildlife conflicts would be modified, reconstructed, or removed.

Combining and splitting allotments would be considered when such an action would help meet plan objectives. The Henrys Fork allotment would be split into 3 allotments and managed by the guidelines of revised

AMPs. The Cottonwood Creek and Antelope Wash allotments would be consolidated into one two-pasture allotment and managed by the guidelines of a new AMP.

Requests for conversions of livestock kind and authorized season of use would be considered on a case-by-case basis following environmental analysis when consistent with wildlife, wild horse, watershed, and riparian objectives.

Conversions from cattle to sheep would not be authorized in crucial wildlife winter ranges.

Stock driveway withdrawals numbers 4, 21, and 23 would be revoked.

See other resource management prescriptions in this document for other restrictions that may apply to livestock grazing management activities.

## Minerals Management

**MANAGEMENT OBJECTIVE:** The objective for management of the minerals program would be to maintain or enhance opportunities for mineral exploration and development.

### Leasable Minerals

#### Fluids

**MANAGEMENT OBJECTIVE:** The objective for management of oil and gas resources would be to provide for leasing, exploration, and development of oil and gas, while protecting other values.

**MANAGEMENT ACTIONS:** Table 2-29 lists lands in the planning area with oil and gas lease restrictions necessary to protect other resource values. All WSAs, incorporated cities and towns, the modified Rock Springs expansion area, Superior recharge area (Ericson Formation), and the 14-Mile recreation area would remain closed to leasing. Additional no leasing areas would be certain cultural and historic sites, Currant Creek drainage, Greater Sand Dunes ACEC, candidate plant species habitat, the Big Sandy and Sweetwater rivers where they have been proposed as Wild and Scenic, certain parts of the Red Creek ACEC, and the Steamboat Special Elk Management Area. Approximately 398,570 acres of BLM-administered mineral estate would not be available for oil and gas leasing.

# ALTERNATIVES

TABLE 2-29

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL

(acres)

### ALTERNATIVE C

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
No Leasing					
14-Mile Recreation Area	20	20	0	0	20
Big Sandy River (within ¼ mile)	240	0	0	240	240
Candidate Plant Species Habitat <sup>1</sup>	3,110	2,700	0	430	3,130
Currant Creek Drainage	23,740	0	2,820	21,200	24,020
Incorporated Cities and Towns (Rock Springs, Green River, and Superior)	3,770	2,700	0	3,090	5,790
LaCleda & Dug Springs Stage Stations & Pine Springs ACEC	110	20	90	0	110
Red Creek ACEC <sup>2</sup>	55,880	20,810	12,230	26,440	59,480
Rock Springs-Green River Expansion Area (new area)	26,600	13,860	6,570	10,510	30,940
Seedskaadee National Wildlife Refuge <sup>3</sup>	13,360	9,960	4,090	0	14,050
Steamboat Mountain ACEC <sup>4</sup>	43,010	43,950	0	0	43,950
Superior Recharge Area (Ericson)	3,660	4,020	0	0	4,020
Sweetwater River (within ¼ mile, Wild & Scenic part)	1,460	0	0	1,460	1,460
WSAs	225,110	134,540	14,310	76,560	229,430
Total No Leasing	400,070	232,580	40,110	139,930	412,620

### No Surface Occupancy (NSO)<sup>5</sup>

1-mile Radius of Cities & Towns (Rock Springs, Green River, McKinnon, Superior, Point of Rocks, Farson, Table Rock, Eden)	20,740	14,270	7,570	12,260	34,100
14-Mile Recreation Area	20	20	0	0	20
Aboriginal Quarry	160	0	0	160	160
Boar's Tusk	90	90	0	0	90

# ALTERNATIVES

TABLE 2-29 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL

(acres)

### ALTERNATIVE C

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
Candidate Plant Species Potential Habitat <sup>6</sup>	36,550	4,520	16,790	19,010	40,320
Cedar Canyon Petroglyphs NRHP Site + ½ mile buffer	500	500	0	0	500
Crookston Ranch (½ mile buffer)	500	580	0	0	580
Currant Creek Drainage	23,740	0	2,820	21,200	24,020
Dry Sandy Swales	20	0	0	20	20
Emmons Cone	60	60	0	0	60
Greater Sand Dunes ACEC <sup>7</sup>	38,650	34,290	4,710	0	39,000
LaBarge, Sugarloaf, and Tolar Petroglyphs (½ mile radius)	1,500	1,000	0	500	1,500
LaClede & Dug Springs Stage Stations + ½ mile buffer	760	1,000	0	0	1,000
Natural Corrals ACEC	1,115	1,270	0	0	1,270
North and South Table Mountains	1,280	1,280	0	0	1,280
Oregon Buttes ACEC	3,450	0	0	3,450	3,450
Pilot Butte	120	0	0	120	120
Pine Butte	320	320	0	0	320
Pine Springs ACEC and Expansion	6,120	0	0	6,120	6,120
Raptor nesting (cliffs, bluffs, outcrops, pinnacles)	890	640	130	130	900
Red Creek ACEC <sup>2</sup>	55,880	20,810	12,230	26,440	59,480
Riparian areas, wetlands, & floodplains <sup>8</sup>	95,550	47,050	22,140	37,860	107,050
Sage Grouse Leaks (¼ mile buffer)	8,170	1,420	4,410	2,660	8,490
South Pass Historic Landmark	5,260	0	0	5,420	5,420
South Pass Historic Landscape	87,580	0	0	90,670	90,670



# ALTERNATIVES

TABLE 2-29 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres)

### ALTERNATIVE C

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			Total
		High	Moderate	Low	
Steamboat Mountain ACEC <sup>4</sup>	43,010	43,500	0	0	43,500
Steep slopes (20%) and highly erosive soils in Monument Valley	1,390	1,480	0	0	1,480
Superior Recharge (Ericson)	3,660	4,020	0	0	4,020
Tri-Territory Marker	10	10	0	0	10
White Mountain Petroglyphs ACEC + ½ mile buffer	500	0	500	0	500
Wild horse herd viewing area + 2-mile radius	8,040	480	4,990	2,570	13,550
<b>Total No Surface Occupancy<sup>a</sup></b>	<b>704,070</b>	<b>366,010</b>	<b>101,600</b>	<b>249,290</b>	<b>716,900</b>
<b>Seasonal Restrictions<sup>5</sup></b>					
Crucial Antelope Winter Range	817,640	268,740	335,370	241,780	445,890
Crucial Deer Winter Range	676,830	330,660	74,590	300,690	705,940
Crucial Elk Winter Range	345,590	182,870	40,280	128,000	351,150
Crucial Moose Winter Range	33,270	8,770	6,500	23,080	38,350
Elk Calving Areas	85,830	55,610	6,130	26,330	88,070
Game Fish Spawning Areas (miles)	210	30	80	140	250
High Value Lambing Areas	760,080	298,940	300,010	216,350	815,300
Moose Parturition Areas	410	0	0	410	410
Mule Deer Parturition Areas	40,880	21,690	0	19,010	40,700
Raptor Habitat (½ mile buffer)	260,020	207,160	42,040	46,830	296,030
Sage Grouse Nesting Areas (within 1¼ miles)	447,170	110,770	218,770	131,840	461,380
<b>Total Seasonal Restrictions<sup>a</sup></b>	<b>2,403,630</b>	<b>1,066,070</b>	<b>667,140</b>	<b>726,480</b>	<b>2,469,690</b>

# ALTERNATIVES

TABLE 2-29 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL (acres)

### ALTERNATIVE C

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			
		High	Moderate	Low	Total
Surface Disturbance Restrictions <sup>5</sup>					
Almond Formation Recharge to Superior Aquifer <sup>10</sup>	4,710	4,710	0	0	4,710
Big Sandy River (within ¼ mile)	240	0	0	240	240
Cedar Canyon ACEC slopes >12%	1,780	1,780	0	0	1,780
Continental Divide Snowmobile Trail (¼ mile buffer)	2,330	0	0	2,330	2,330
Currant Creek Drainage	23,740	0	2,820	21,200	28,730
Game Fish Spawning Area (miles)	210	30	80	140	250
Greater Sand Dunes ACEC and 1-mile buffer <sup>11</sup>	70,850	58,600	13,190	0	71,790
Highly erodible soils	158,110	62,390	34,390	63,100	159,880
Historic Trails (½ mile buffer)	195,360	82,440	59,410	59,120	200,970
Major Highway Corridors (28, 191, 530, 430, I-80) <sup>12</sup>	10,930	3,520	4,940	3,090	11,550
Monument Valley <sup>13</sup>	64,300	64,300	0	0	64,300
Pine Mountain Area	161,390	66,780	10,020	90,150	166,950
Recreation Sites & ¼ mile buffer	930	330	130	470	930
Riparian Areas	8,730	2,780	1,710	4,940	9,430
Sage Creek Watershed	52,670	6,660	32,450	13,850	52,960
Slopes greater than 25%	198,720	89,210	31,410	88,320	208,940
Steamboat Mountain Crucial Overlap <sup>4</sup>	27,000	27,000	0	0	27,000
Sweetwater River (within ¼ mile, Wild & Scenic part)	930	0	0	930	930
View from Fontenelle Reservoir	120	220	0	0	220
VRM Class II Lands	500,130	186,280	26,340	302,630	515,250

# ALTERNATIVES

TABLE 2-29 (Continued)

## AREAS OF OIL AND GAS LEASE RESTRICTIONS BY HYDROCARBON POTENTIAL

(acres)

### ALTERNATIVE C

Category	Surface Ownership Federal Acres	Hydrocarbon Potential (Federal Surface and Subsurface Acres)			Total
		High	Moderate	Low	
White Mountain Petroglyphs and ½ mile buffer	500	0	500	0	500
Within 500' of water, 100 year floodplains, and wetlands <sup>a</sup>	95,550	47,050	22,140	37,860	107,050
Within 100' of inner gorge of intermittent/ ephemeral streams	7,170	4,130	920	2,500	7,550
<b>Total Surface Disturbance Restrictions<sup>a</sup></b>	<b>1,422,450</b>	<b>734,820</b>	<b>221,240</b>	<b>714,460</b>	<b>1,670,520</b>

<sup>1</sup> As new populations are identified, their locations would be added to this total.

<sup>2</sup> Areas that have been identified as containing 1) highly erosive soils, 2) areas subject to slumping, 3) slopes greater than 25 percent, and 4) riparian areas.

<sup>3</sup> This RMP will not make decisions for the management of federal minerals on this area.

<sup>4</sup> All expiring leases would be withheld until a leasing plan could be developed to identify any areas suitable for surface occupancy. Existing leases held by production would be honored and would be allowed to continue operation under existing lease stipulations. Conditions of Approval could be added to these stipulations to protect the elk herd. In the remainder of the crucial winter range and parturition areas outside the ACEC, only progressive development of one or two areas could occur simultaneously. Satisfactory abandonment and reclamation of an area or field would be required prior to development of additional areas.

<sup>5</sup> Refer to Appendix 2, "Wyoming BLM Standard Mitigation Guidelines."

<sup>6</sup> Searches would be required prior to surface disturbance activities.

<sup>7</sup> Further construction, development, and surface occupancy would be confined to the existing area of development. Within the rest of the ACEC (east of the developed area) further construction, development, and surface occupancy would be precluded from stabilized dunes. The number of producing wells or temporarily shut-in wells would not exceed 3 per section within the developed area, and one well per section in the undeveloped area to the east. Additional wells would only be considered if site specific analysis determined that ACEC values would be retained.

<sup>8</sup> Acreage figures for floodplains are based on Housing and Urban Development maps and are not complete for entire resource area.

<sup>9</sup> Areas of restriction may overlap. If they overlap, the area of overlap is only counted once.

<sup>10</sup> Protection would be through use of mitigation.

<sup>11</sup> Construction within one mile or the visual horizon, would consider alternatives like relocating visual screening, or any other methods available to reduce objectionable visible profile from the ACEC.

<sup>12</sup> Manage for Class II visual resources.

<sup>13</sup> Surface disturbance would be allowed from February 1 to July 31 with an approved plan to mitigate impacts. A ¼ to ½ mile buffer around badlands would be used to protect watershed.

## ALTERNATIVES

The remainder of the planning area would be open to oil and gas leasing with restrictions that would apply to certain areas. Types of resource values that would be protected by a no surface occupancy limitation are: cultural, historic and recreation sites, certain ACECs, some topographic features, high value watershed areas, the wild horse viewing area and a 2-mile radius, steep slopes and highly erosive soils in Monument Valley, candidate plant species locations and habitat, wildlife, the Superior recharge area (Ericson Formation), South Pass Historic Landscape, and a 1-mile radius from concentrated population areas. About 676,720 acres would be available for lease with a no surface occupancy restriction.

Seasonal restrictions would be placed on certain big game winter ranges, calving or parturition areas, sage grouse nesting areas, raptor habitat, game fish spawning areas, Monument Valley, and lambing areas. About 2,459,690 acres would be available for lease with seasonal restrictions.

Mineral exploration and development activities would be restricted, where appropriate, to protect the following types of resource values: all cultural sites and historic trails, historic sites, certain visual resources, soils and watershed, all slopes greater than 25 percent, recreation sites, the recharge area of the Superior water supply (Almond Formation), South Pass Historic Landscape, major highway corridors, wildlife, slopes greater than 12 percent in Cedar Canyon ACEC, slopes greater than 20 percent in Monument Valley, certain ACECs, and proposed Wild and Scenic River segments. Surface disturbance restrictions would be placed on 1,503,570 acres.

Maps 49, 50, 51, and 52 shows those portions of the planning area where no leasing would be applied and areas where occupancy and disturbance would be limited.

### Solid Leasables (Coal)

The Federal coal management options for this alternative (Alternative C) were derived through comparing the coal screening process applications and the impact analyses of the No Action Alternative (Alternative A) and Alternative B. Based on these comparisons, and the management options defined for the other resources in this alternative, coal management options that provided the maximum protection to the other resource values in the planning area were selected. See Appendix 3-2 for a complete explanation of how the coal screening process was conducted and how the coal screening results were applied for each alternative in this RMP EIS.

**MANAGEMENT OBJECTIVES:** The objectives for management of the federal coal resources in the planning area would be to provide for full protection of other resource values while still providing for both short and long-range development of federal coal, in an orderly and timely manner, consistent with the policies of the federal coal management program, environmental integrity, national energy needs, and related demands.

**MANAGEMENT ACTIONS:** With appropriate limitations and mitigation requirements for the protection of other resource values, all BLM-administered public lands and Federal coal lands in the Green River planning area, except for those identified in Table 2-11, would be open to coal resource inventory and exploration to help identify coal resources and their development potential.

About 47,000 acres of federal coal lands within the Coal Occurrence and Development Potential area (Map 18) would be open to further consideration for coal leasing and development (i.e., new competitive leasing, emergency leasing, lease modifications, and exchange proposals, under the Federal Coal Management Program) with appropriate and necessary conditions and requirements for protection of other land and resource values and uses (Table 2-30).

These 47,000 acres would be subject to continued field investigations, studies and evaluations to determine if certain methods of coal mining can occur without having a significant long-term impact on wildlife, in general, and on threatened and endangered plant and animal species and their essential habitats. Such investigations, studies and evaluations may be conducted on an as-needed or case-by-case basis in reviewing individual coal leasing or development proposals (e.g., mine plans) or, if opportunities or needs arise, area-wide studies may be conducted. These studies would include keeping resource base data current (e.g., where existing raptor nests become abandoned or where new raptor nests become established), analysis of effects to wildlife and threatened and endangered species habitats and populations, and the cumulative effects of mining operations and other activities in the area. Consultation with other agencies (e.g., USFWS, WGFD, etc.), special interest groups, and with industry would occur as needed or required.

About 405 acres of the North Fork Vermillion Creek drainage would be closed to further consideration for Federal coal leasing and development. Coal leasing and development would conflict with the intended management of this area for possible reintroduction of candidate wildlife and plant species of high interest to the State of Wyoming.

## ALTERNATIVES

**TABLE 2-30**

### **SUMMARY DESCRIPTION OF COAL SCREENING PROCESS RESULTS AND COAL MANAGEMENT ACTIONS (Alternative C)**

Coal Screening Process Results	Federal Coal Lands (acres)
Total Federal Coal Development Potential Area	475,700
Leased Federal Coal Lands (Not Evaluated)	30,200
Federal Coal Lands Unsuitable for (Closed To) Leasing Consideration	12,600
Federal Coal Lands Unacceptable for (Closed To) Leasing Consideration	416,000
<b>Coal Management Actions</b>	
Remaining Federal Coal Lands Acceptable for Leasing Consideration	46,900
Portion Subject to No Surface Occupancy Restriction	0
Portion Subject to No Surface Mining Restriction	0

Big game crucial winter ranges and birthing areas (about 276,200 acres) would be closed to further consideration for coal leasing and development.

The greater Cooper Ridge and Elk Butte areas (about 25,765 acres) would be closed to further consideration for Federal coal leasing and development.

For the protection of important petroglyph sites, other important cultural resource values, and important geologic and ecologic features, about 25,952 acres of Federal coal lands would be closed to further consideration for leasing and development.

About 12,200 acres of Federal coal lands within the City of Rock Springs Expansion Area would be closed to further consideration for coal leasing and development.

In general, cultural sites on Federal coal lands would be managed as avoidance areas for surface disturbing activities. As avoidance areas, cultural sites would be open to consideration for coal leasing and development. Surface disturbing activities associated with such actions as surface coal mining methods, exploration drilling, construction and location of ancillary facilities, roads and other types of rights-of-way, etc., would be avoided in these areas, if possible. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities (primarily excavation and other data recovery measures) would be emphasized. Except for those closed to leasing, or closed to surface mining methods, or identified as having no surface occupancy restrictions, this includes cultural sites that

are either listed or that are eligible for listing on the NRHP.

Grouse nesting areas (sage and sharptail grouse) would be closed to further consideration for coal leasing and development.

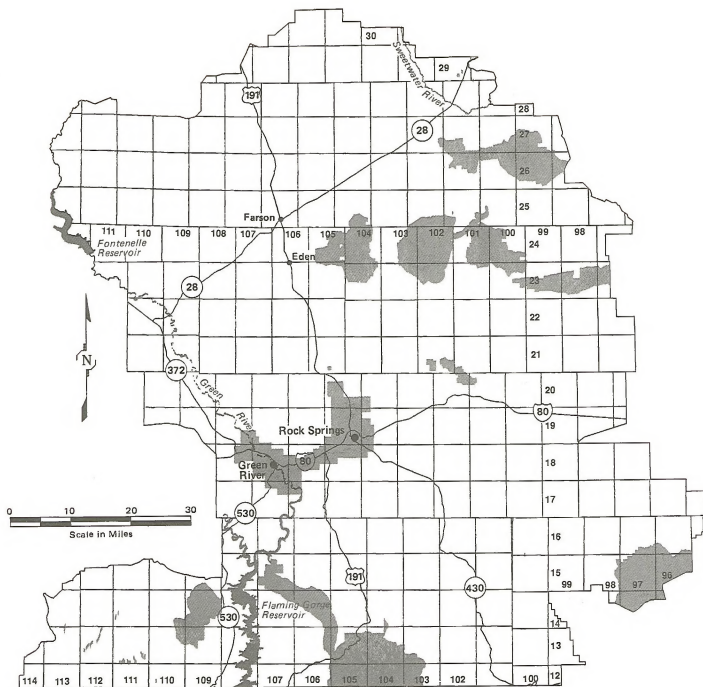
Active grouse leks (sage and sharptail grouse) and the area within a ¼ mile radius of active leks would be closed to further consideration for coal leasing and development.

Wetland and riparian areas on Federal coal lands (about 2,000 acres) would be closed to further consideration for coal leasing and development.

#### **Areas of BLM-Administered Public Land Surface Overlying State-Owned Coal**

About 29,000 acres of BLM-administered public land surface overlying state-owned coal would be closed to further consideration for coal leasing and development for protection of other land and resource values and uses (including big game crucial winter range, grouse leks, cultural values, geologic features, rights-of-way, City of Rock Springs expansion area). About 1,000 acres would be unsuitable for further leasing consideration.

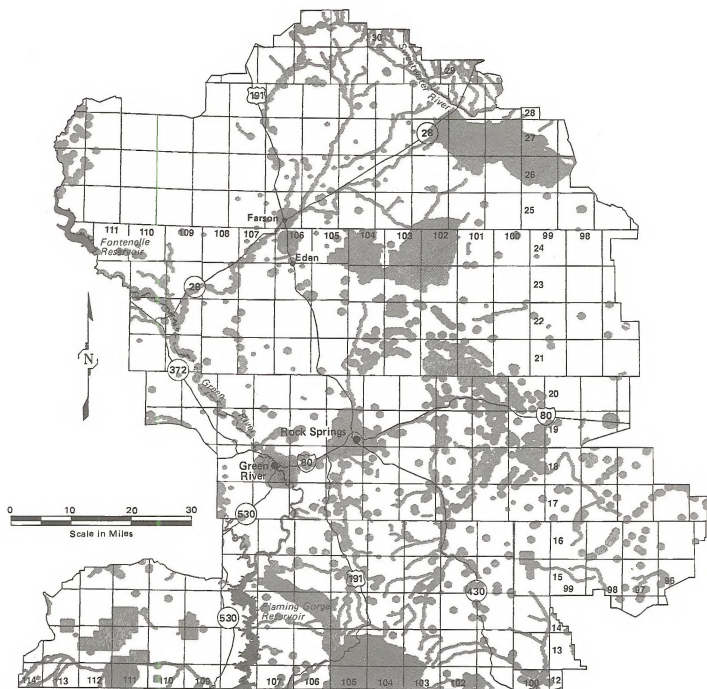
About 3,000 acres would be closed for surface mining activities to protect cultural and geologic values. These would be no surface occupancy and very limited surface occupancy areas.



 No Lease Area

**Map 49**  
**Alternative C**  
**No Lease Areas**  
**Green River Planning Area**



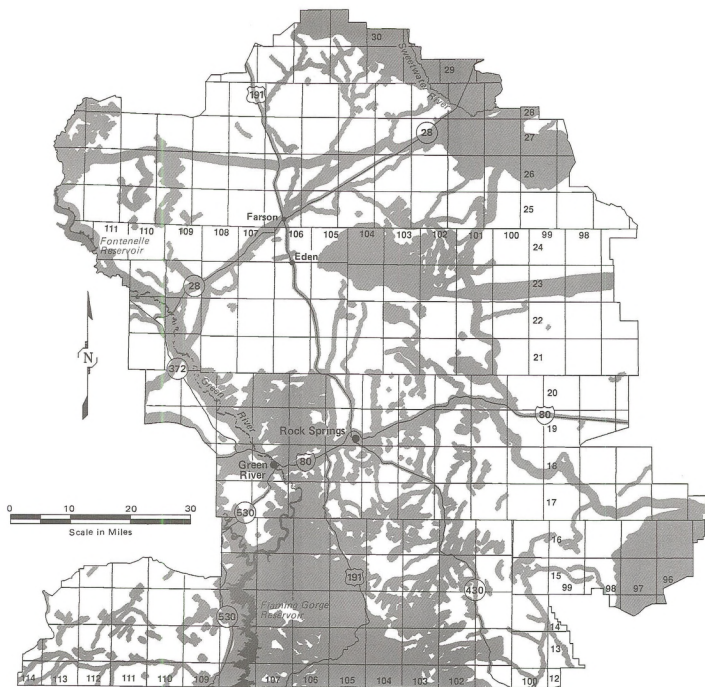


 No Surface Occupancy Area

Map 50  
Alternative C  
**No Surface Occupancy Areas**  
Green River Planning Area



**Map 51**  
**Alternative C**  
**Seasonal Restriction Areas**  
**Green River Planning Area**



■ Surface Disturbance Restriction Area

**Map 52**  
**Alternative C**  
**Lease with Surface**  
**Disturbance Stipulations**  
**Green River Planning Area**

## ALTERNATIVES

### Preference Right (Coal) Lease Applications (PRLAs)

Processing of the Beans Spring coal PRLAs (the one coal PRLA project proposal in the planning area) would be completed. In the preparation of the EIS for this PRLA project, special attention will be given to those sensitive value areas identified through the unsuitability review and multiple use conflict evaluation. The EIS will result in development of needed stipulations for the protection of sensitive values. These protective stipulations will be carried through the final processing and leasing decisions for the PRLA project, which will result in determining if the preference right applicant is successful in meeting the final showing requirements and is entitled to a preference right (non-competitive) Federal coal lease for the Beans Spring coal project area (Appendix 3-2).

### Solid Leasables (Sodium/Trona)

**MANAGEMENT OBJECTIVES:** The objectives for management of the federal sodium (trona) resource would be to provide for both short- and long-range development of federal sodium (trona) in an orderly and timely manner.

**MANAGEMENT ACTIONS:** The known sodium leasing area (Map 18) would be open to exploration and consideration for leasing and development, but would be closed to prospecting permits. The remainder of the planning area would be open to sodium prospecting except for areas closed to surface mining or mechanical prospecting type activities (areas closed to drilling, vehicle use, and explosive charges) (Table 2-11). Leasing would be considered on a case-by-case basis and management direction applied in this plan would be considered.

### Mineral Materials

**MANAGEMENT OBJECTIVE:** The objective for management of salable minerals would be to provide mineral materials in convenient locations for users while protecting surface resources.

**MANAGEMENT ACTIONS:** Sale areas and community pits would be established in conformance with other resource objectives. Mine reclamation plans would be developed for both new and existing use areas. Additional sales would be evaluated. Requests from users for mineral material disposals would be evaluated.

Sales of mineral materials from established sites would be allowed. Proposed sales from new sites would be evaluated on a case-by-case basis.

Moss rock and sand would be provided for in localized common use areas. Topsoil sale areas would not be established.

Table 2-13 shows the areas that would be closed to mineral material sales.

### Locatable Minerals

**MANAGEMENT OBJECTIVE:** The objective for management of locatable minerals would be to provide opportunities to explore, locate, and develop mining claims while protecting other resource values.

**MANAGEMENT ACTIONS:** With the exception of lands withdrawn from locatable minerals, the planning area would be open to mineral exploration, location, and development. The existing minerals classification with-drawals (phosphate, coal, oil shale) would be revoked (Table 2-7). Table 2-6 lists proposed withdrawals.

### Geophysical

**MANAGEMENT OBJECTIVE:** The objective for management of geophysical activity would be to provide opportunities for exploration of mineral resources or scientific use, while protecting other resource values.

**MANAGEMENT ACTIONS:** The entire planning area would be open to consideration for geophysical exploration, subject to appropriate environmental analysis and surface protection stipulations. The areas listed in Table 2-14 would be closed to the use of geophysical vehicles and explosive charges.

ORV management prescriptions would apply to the use of vehicles for geophysical operations (see Off-Road Vehicle Management for this alternative). Areas closed to leasing would be closed to seismic vehicle use. In ORV limited areas, geophysical vehicles would be restricted to existing roads and trails.

Geophysical vehicle travel through developed and semi-developed recreation sites would be restricted to existing roads and trails.

Geophysical activity on Sage Creek Mountain would be limited to specific places to protect cultural values (2 acres).

See other resource management prescriptions in this document for other restrictions that may apply to mineral management activities.

## ALTERNATIVES

### Off-Road Vehicle Management

**MANAGEMENT OBJECTIVE:** The objectives for off-road vehicle management would be to provide opportunities for off-road vehicle use in conformance with other resource objectives.

Some types of motor vehicle use would be allowed under the "necessary tasks" work exemption provided

resource damage did not occur. Examples of necessary tasks include picking up big game kills, repairing range improvements, managing livestock, and geophysical activities associated with oil and gas exploration.

**MANAGEMENT ACTIONS:** Off-road vehicles would be managed according to the ORV designations in the ORV plans (Table 2-31 and Map 53).

**TABLE 2-31**

### ORV DESIGNATIONS (Alternative C)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>Aboriginal Quarry Site</b> Closed	160	To protect cultural values.
<b>Big Game Winter Ranges</b> Limited through seasonal closures (Nov. 15 - April 30 as needed)	1,500,000	To reduce stress to wintering animals.
<b>Candidate Plant Species</b> Closed yearlong (does not apply to over-the- snow vehicles)	36,550	To protect plant populations.
<b>Cedar Canyon ACEC</b> Closed	515	Closed within 1/2 mile of petroglyphs to protect cultural values.
Limited to existing roads and trails (no over-the-snow vehicles)	2,035	To protect wildlife and cultural values.
<b>Crookston Ranch</b> Closed	40	To protect historic site.
<b>Currant Creek/Sage Creek/ Pine Mountain/Little Mountain areas</b> Limited to designated road and trails (including to over-the-values. snow vehicles)	285,200	To protect sensitive fisheries and watershed
<b>Deer Parturition Areas</b> Limited through seasonal closures (May 1 - June 30 as needed)	40,880	To reduce stress to deer.

# ALTERNATIVES

TABLE 2-31 (Continued)

## ORV DESIGNATIONS (Alternative C)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>Dry Sandy Swales</b> Closed	20	To protect integrity of setting and soils.
<b>Dug Springs Station</b> Limited to designated trails	10	To protect historic values.
<b>Elk Calving Areas</b> Limited through seasonal closures to be decided by biologist (May 1 - June 30 as needed)	85,830	To reduce stress to elk.
<b>General GRRRA</b> Limited to existing roads and trails	2,883,285	To reduce resource damage and limit new overnight roads.
<b>Greater Sand Dunes ACEC</b> Open	10,500	Area designated open to allow recreating public a place to play in the sand dunes.
Limited to existing roads and trails	5,810	To protect ACEC values.
Closed	90	Road closed around Boar's Tusk to protect geologic values.
<b>Green River City Limits</b> Closed	4,500	Hillsides and steep slopes within a 2-mile radius around the city limits are closed (including snowmobiles) to prevent impacts from ORVs on the surrounding hillsides.
<b>LaBarge Bluffs Petroglyphs</b> Closed	20	To protect cultural values.
<b>LaCiede Stage Station</b> Limited to designated trails	10	To protect historic values.
<b>Monument Valley Area</b> Limited to designated roads	64,300	To protect wildlife habitat and fragile soils.
<b>Moose Calving Areas</b> Limited through seasonal closures to be decided by biologist (May 1 - June 30 as needed)	410	To reduce stress to moose.



# ALTERNATIVES

TABLE 2-31 (Continued)

## ORV DESIGNATIONS (Alternative C)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>Natural Corrals ACEC</b> Closed	20	NRHP site and the trail ½ mile to the spring which are closed to protect wildlife and cultural values.
Limited to existing roads and trails	1,300	To protect wildlife and cultural values.
<b>North &amp; South Table Mountains</b> Limited to existing roads and trails	1,280	To protect cultural and wildlife values.
<b>Oregon Buttes ACEC</b> Closed	3,450	To protect ACEC values.
<b>Parting of the Ways</b> Closed	40	To protect historical values.
<b>Pine Springs ACEC</b> Closed	90	Closed yearlong within fences including over-the-snow vehicles to protect cultural and prehistoric values.
Limited to existing road	90	To protect cultural and prehistoric values.
<b>Pine Springs Expansion Area</b> Closed yearlong - including over-the-snow vehicles	6,030	To protect cultural and prehistoric values.
<b>Raptor Nesting Areas</b> Limited through seasonal closures (Feb. 1 - July 31)	890	To protect nesting raptors.
<b>Riparian Areas</b> Limited to existing roads and trails	8,730	To protect riparian and watershed values.
<b>Sage Creek Mountain</b> Limited to existing roads and trails	1,300	To protect cultural values.
<b>South Pass</b> Closed	41,400	To protect cultural values and scenic values.
Limited to designated roads and trails	46,180	To protect cultural values.

## ALTERNATIVES

**TABLE 2-31 (Continued)**

### ORV DESIGNATIONS (Alternative C)

NAME OF AREA AND TYPE OF DESIGNATION	APPROXIMATE ACRES	SEASON/DATES OF RESTRICTION & REASON FOR RESTRICTION
<b>Steamboat Mountain</b> Limited through seasonal closures	43,030	To protect wildlife values.
<b>Steep Slopes of White Mountain</b> Limited to designated roads and trails	68,640	To protect watershed and visual values.
<b>Sugarloaf Petroglyphs</b> Closed	20	To protect cultural values.
<b>Tolar Petroglyphs</b> Closed	20	To protect cultural values.
<b>Tri-State Monument Proposed ACEC</b> Red Creek area Closed	8,020	To protect watershed values.
<b>White Mountain Petroglyphs ACEC</b> Closed	20	All acres in ACEC closed to maintain integrity of setting and reduce theft and vandalism.

Travel in wildlife crucial habitats (strutting grounds, spawning beds, big game ranges, etc.) (Table 2-31) would be seasonally restricted.

Travel would be restricted to certain designated roads during elk calving and deer parturition periods.

Generally, over-the-snow vehicle use would be subject to the prescriptions described in Table 2-31 unless a site specific analysis determines otherwise.

An ORV implementation plan would be prepared to replace the two existing ORV plans. This ORV plan would reflect the ORV designations made in this plan.

Off-road vehicles refers to mechanical and mechanized vehicles such as mountain bikes and big game carriers. The implementation plan would consider mountain bike and other mechanized vehicles needs. Some types of motor vehicle use would be allowed under the "necessary tasks" work exemption provided resource damage did not occur. Examples of necessary tasks include picking up big game kills, repairing range improvements, and managing livestock. Approximately 137,672 acres would remain closed to off-road vehicle

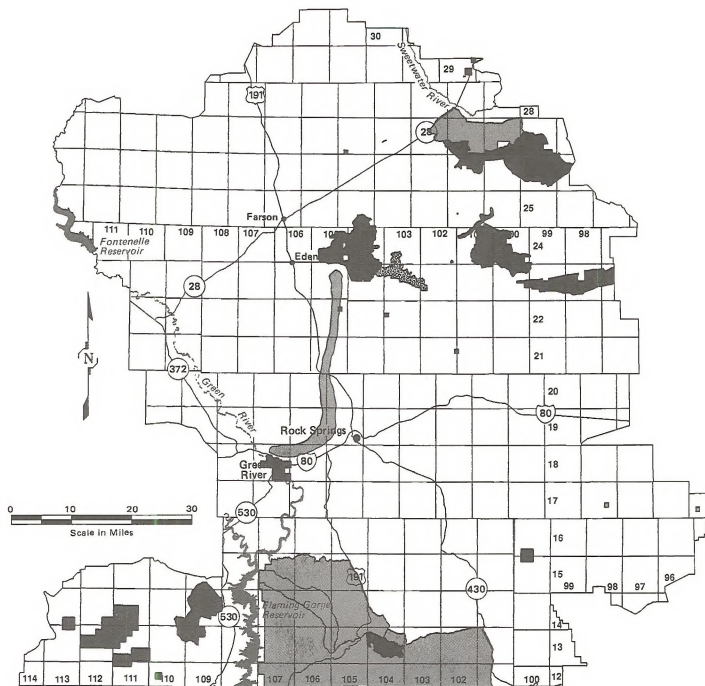
use to protect naturalness, solitude, and opportunities for unconfined recreation.

Geophysical vehicle use would conform to these ORV management prescriptions: use of vehicles in areas, except for areas proposed to be designated as closed, could be considered under the guidelines of necessary tasks (see glossary) provided that a site specific analysis determines resource objectives could be met.

See other resource management prescriptions in this document for other restrictions that may apply to off-road vehicle management activities.

## **Recreation Resource Management**

**MANAGEMENT OBJECTIVES:** The objectives for recreation management would be to ensure the continued availability of outdoor recreational opportunities sought by the public while protecting other resources. Other objectives would be to meet legal requirements for the health and safety of visitors and to mitigate conflicts between different types of resource users.



**Map 53**  
**Alternative C**  
**Off Road Vehicle Designations**  
**Green River Planning Area**

## ALTERNATIVES

**MANAGEMENT ACTIONS:** Most public lands in the planning area would be open and available for consideration to all individual, commercial, and competitive outdoor recreation uses. Existing developed sites would be managed for public health and safety. Undeveloped areas would be managed to give first consideration to air quality, watershed, wild horses, and wildlife values.

Areas for ORV rallies, and outings would be provided on a permit basis.

A 14-day camping limit on all public lands would be maintained. Camping would be limited to 14 days within a 28-day consecutive period. After the 14th day of occupation, campers must move outside a 5-mile radius of the previous location. Camping within 500 feet of crucial wildlife and livestock waters would not be allowed. Dispersed camping in riparian areas would be allowed with a 500-foot buffer from water. Areas can be closed if resource damage were indicated.

Special recreation permits would be allowed on a case-by-case basis. Necessary mitigation for special recreation permits, commercial recreation uses, and major competitive recreation events would be included to provide resource protection and public safety.

The wild horse viewing area would be managed for optimum wild horse viewing (8,040 acres).

The Wind River Front, Oregon Buttes, Honeycomb Buttes, Steamboat Mountain, Killpecker Sand Dunes, Leucite Hills, Red Creek, Pine Mountain, Little Mountain, and Cedar Canyon areas would be managed to assure their continuing value for recreational opportunities (Map 21). Recreation area management plans would be prepared for these areas.

The Killpecker Sand Dunes, Oregon and Mormon Pioneer National Historic Trails, the Green River, and Wind River Front would be managed as special recreation management areas (about 372,288 acres). Recreation area management plans would be developed for these areas.

Recreation project plans and an interpretive prospectus would be developed for the 14-Mile recreation site, Sweetwater Campground, Boar's Tusk, Leucite Hills, the Continental Divide Snowmobile Trail, the Farson fossil fish beds, and the proposed wild horse viewing area.

The integrity of the Continental Divide Snowmobile Trail would be maintained by limiting large surface-disturbing activities on or within ¼ mile of the trail (2,330 acres).

Mountain bike trail opportunities would be explored. Partnerships with local citizens and Chambers of Commerce, U.S. Forest Service, and the State of Wyoming would be pursued. Specific areas would include the Little Mountain-Firehole Canyon-Flaming Gorge area and the Wyoming Continental Divide Snowmobile Trail. Trails would be signed, and brochures would be developed.

Recreational use along the Green River, Sweetwater River, Big Sandy River, Bitter Creek between Rock Springs and Green River, and the Sand Dunes would be identified, and recreation area management plans would be developed. The establishment of a "greenbelt" along the Green River from Fontenelle Dam to Flaming Gorge Reservoir (approximately 3,200 acres) would be supported.

Four backcountry byways and one scenic loop for the Tri-Territory Loop, the Lander Road, Fort LaCade Loop, the Firehole-Little Mountain Loop, and the Flaming Gorge Scenic Loop would be considered. Brochures and interpretive signs would be developed and prepared.

No new recreation sites would be developed within riparian zones. Off-road vehicle travel restrictions would apply.

The natural values of Boar's Tusk, Pilot Butte, and Emmons Cone would be protected from surface disturbance and the integrity of the geologic features would be maintained. These areas (270 acres) would be closed to surface disturbing activities such as those associated with mineral development activities, roads, pipelines and powerlines, etc. These areas would be open to activities that would enhance management of these features (e.g., interpretive signs, fences, or barriers to ensure protection) (Table 2-29 and Table 2-4). Interpretive facilities would be allowed.

The 14-Mile recreation area (20 acres) would be closed to surface disturbing activities such as those associated with mineral development, powerlines, pipelines, or well pads. The area would be open to activities such as recreation site facilities.

Surface disturbance on other recreation sites would be allowed if recreation values could be maintained.

Consideration for permanent recreation site facilities in existing use areas would be made provided proper mitigation and exceptions to Executive Order 11988 apply. New recreation site facilities would be located 500 feet from riparian areas and floodplains.

## ALTERNATIVES

See other resource management prescriptions in this document for other restrictions that may apply to recreation resource management activities.

### Vegetation Management

**MANAGEMENT OBJECTIVES:** The objectives for management of vegetation would be that vegetation treatments (mechanical, biological, fire) would be used to remove stands of brush in specific areas to meet wildlife, watershed, and wild horse management objectives and provide for plant diversity to meet wildlife and livestock management objectives.

**MANAGEMENT ACTIONS:** Approximately 40,984 acres have been identified for potential treatment primarily to enhance wildlife habitat.

Chemical treatment would be utilized only for weed control.

Prescribed fire would generally be the preferred method of vegetation manipulation to convert stands of brush to grasslands and to promote regeneration of aspen stands and/or shrub species. Low intensity burns during periods of high soil moisture would be the preferred methods/times in mountain shrub communities.

Prescribed burns or other treatments may be conducted in crucial big game winter ranges if habitat values would improve for these species. Some burns would be designed to promote brush regeneration.

All vegetation treatments would be designed irregular in shape for edge effect, cover, and visual esthetics.

No more than 5 percent of sagebrush within antelope and mule deer winter ranges would be treated in a 20-year period. Treatment areas would be irregular in shape (4,850 acres). This would apply to federally administered winter range only.

Treatment units within VRM Class II areas would not exceed 40 acres in size and no more than 10 percent of the area would be treated within a 20-year period. Treatment areas would be irregular in shape.

No more than 10 percent of sagebrush within 2 miles of sage grouse leks would be treated within a 20-year period. Treatments would be irregular in shape.

Vegetation buffer strips of 300 feet would be left intact adjacent to perennial streams.

The inner gorge of intermittent and ephemeral drainages should be burned in such a manner as to leave mosaic patterns or unburned areas of vegetation. No more than 50 percent of the cover in the inner gorge area may be burned or treated.

Herbicide loading sites would be located at least 500 feet from live water, floodplains, or riparian areas and would be utilized in accordance with the guidelines in Appendix 9-5. Treatments would adhere to all label directions.

See other resource management prescriptions in this document for other restrictions that may apply to vegetation management activities.

### Visual Resource Management

**MANAGEMENT OBJECTIVE:** The objective for visual resource management would be to maintain or improve scenic values and visual quality.

**MANAGEMENT ACTIONS:** VRM classes would be modified to enhance management in special management areas, along highways, and in important cultural or historical areas. The VRM classification acreages and boundaries would become as shown on Table 2-16 and Map 54.

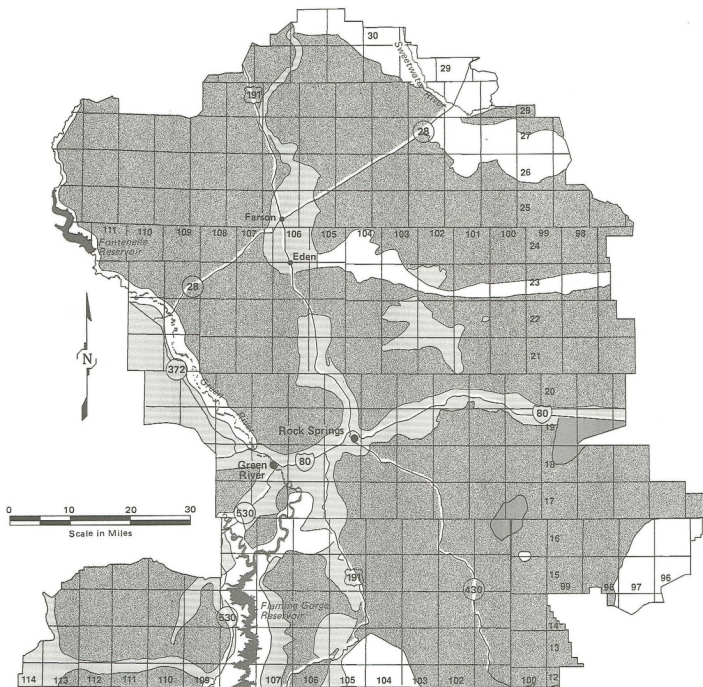
The scenic values along Highway 28 within Fremont County (12.5 miles) would be protected and managed as a Class II visual area. All proposed lands actions within view of the highway would be evaluated for impacts and mitigated to protect the scenic value of this historical area. Other major highway corridors would be managed as Class II visual areas (28, 191, 430, 530, and I-80).

The South Pass area would be managed for Class II visual values (87,540 acres).

Suitable wild horse herd viewing area(s) would be developed to enhance public viewing of horses. Short-term intrusions and actions that would blend with the landscape or would benefit the intent of the wild horse viewing area would be considered. The viewing area would be closed to surface disturbing activities (e.g., those associated with mineral development; roads, pipelines, powerlines, structures; etc.) on or within a 2-mile radius of any wild horse viewing area (8,040 acres) (Table 2-29 and Table 2-4).

All activities that could be viewed from the Fontenelle Reservoir would be designed to be subordinate to the landscape.





- Class II
- Class III
- Class IV
- Rehabilitation Area

**Map 54**  
**Alternative C**  
**Visual Resource**  
**Management**  
**Green River Planning Area**



## ALTERNATIVES

A plan to improve rehabilitation areas (24,000 acres) to Class IV or above would be prepared.

A program would be initiated in the planning area to improve the visual quality of the oil field areas by working with the companies to reduce the visual impact of existing facilities by such methods as painting, screening, and reclamation.

See other resource management prescriptions in this document for other restrictions that may apply to visual resource management activities.

### Watershed/Soils Management

**MANAGEMENT OBJECTIVES:** The objectives for watershed/soils management would be to stabilize and conserve soils, to increase vegetative production, to maintain or improve water quality, and to protect, maintain, or improve wetlands, floodplains, and riparian areas.

**MANAGEMENT ACTIONS:** Bank erosion would be reduced where it has resulted in losses of riparian habitat and accelerated soil erosion would be reduced.

Those areas where the soils are highly erodible or difficult to reclaim would receive increased attention and where necessary, surface disturbing activities on these areas could be limited. These areas would be avoided where possible.

Sediment, phosphate, and salinity load would be reduced in the planning area, where possible.

Alternative water supplies or facilities would be provided for livestock to relieve grazing pressure along stream bottoms. All livestock grazing would be removed from around livewater streams.

BLM would participate with federal and local government agencies in the development and implementation of plans to reduce salinity in the Jack Morrow and Eighteenmile Canyon watersheds and the Big Sandy Seeps and in the development and implementation of plans to reduce phosphates delivered to the Fontenelle and Flaming Gorge Reservoirs. Salinity control plans and plugging of flowing wells would be completed. Salinity control plans would be prepared for these areas mentioned above and any areas identified in the future.

Roads and trails, seismic lines, rights-of-way, and oil and gas sites would be identified to determine those causing erosion and water quality degrading problems. Rehabilitation plans would be implemented. Areas

identified for inventory include Cedar Canyon, Little Colorado Desert, Red Creek, and Tri-State Monument area which includes Sage Creek/Currant Creek.

Watershed management plans directed at reducing erosion and sediment yield, promoting ground cover, and enhancing water quality would be developed. Plans would be prepared for Cedar Mountain, and Sage Creek/Currant Creek, and the Red Creek Management Plan would be updated. The habitat management plan on Sage and Currant Creeks would be updated to include watershed management directives.

The areas within 500 feet of or in 100-year floodplains, wetlands, riparian areas, or perennial streams and their associated wetlands would be closed to surface disturbing activities (no surface occupancy). The areas within 100 feet of the edge of or in the inner gorge of intermittent and large ephemeral drainages would be avoidance areas for surface disturbing activities. Activities could be allowed if a site specific analysis determines no adverse impacts would occur to water quality and soil degradation did not occur. Linear crossings would be considered on a case-by-case basis.

Permanent recreation site facilities would be placed at least 100 feet from riparian areas and floodplains. No sanitary facilities would be placed in these areas.

Vegetative buffer strips would be maintained between developed recreational facilities and live water.

Surface disturbing activities would avoid slopes greater than 25 percent (198,720 acres) or activity during wet and muddy periods without an approved plan. Large or heavy truck traffic would avoid activity during wet periods unless the roads are graveled for all-season use.

Roads would be constructed as described in BLM Manual 9113. New main artery roads would be designed to reduce sediment, salt, and phosphate loading to the Green River. Running surfaces of the roads would be graveled provided that the base does not already contain sufficient aggregate. Upgrading and graveled of existing main artery roads would be instituted as soon as possible.

Reserve pits in areas with a soil permeability of greater than 0.06 inch per hour would be lined. All production pits would be self-contained (Appendix 5-1).

Areas where groundwater was less than 100 feet in depth from the surface and have a permeability of no more than 0.1 foot/day would be closed to any plant, mill, or associated tailing pond and sewage lagoon.

## ALTERNATIVES

Recharge areas would be managed to protect groundwater quality. Activities within the Superior recharge area would be designed and allowed only if groundwater quality would be protected.

See other resource management prescriptions in this document for other restrictions that may apply to watershed or soils management activities.

### Wild Horse Management

**MANAGEMENT OBJECTIVES:** The objectives for management of wild horses would be to protect, maintain, and control a viable, healthy herd of wild horses while retaining their free-roaming nature; to provide adequate habitat for free-roaming wild horses by management consistent with environmental protection; and to provide opportunity for the public to view wild horses.

**MANAGEMENT ACTIONS:** Horses would be maintained at AMLs of 1,105 to 1,600 within five Wild Horse Herd Management Areas (Table 2-17). A wild horse herd management area would be established in the Little Colorado Desert area with an AML of 69 to 100 horses (see Table 2-17). Management plans for 5 wild horse herd management areas in the planning area would be implemented. The specific boundary and specific management prescriptions for the Little Colorado Desert area would be identified in the activity plan. Adequate forage for wild horse populations would be provided (17,400 AUMs).

Fertility and selective gathering programs would be implemented in each of the wild horse areas. These actions would aid in stabilizing populations, managing for conditions and special characteristics, and supplying an adoptable population (young horses). Gathering cycles would vary depending upon plan objectives, resource conditions, and needs. See Table 2-19 for estimated populations based on a 3-year gathering cycle.

New fences would not be constructed in wild horse herd management areas.

Development of wild horse waters in antelope winter ranges would be allowed. Only controlled waters (i.e., wells) would be developed.

Water developments would be proposed to enhance wild horse habitat.

The existing wild horse management plans would be updated and a new plan for the Little Colorado Desert WHHMA would be prepared. Allotment management

plans would reflect wild horse herd management objectives. A monitoring program would be developed to provide information to support wild horse management decisions.

Other resources would be maintained or protected consistent with resource objectives, while maintaining viable, healthy herds and appropriate management levels. Wild horses would be managed in their natural state and provide the public the recreational opportunity for viewing wild horses.

WHHMAs would be managed in a healthy state and for an ecological balance among wild horses and land and resource uses.

See other resource management prescriptions in this document for other restrictions that may apply to wild horse management activities.

### Wildlife Management

**MANAGEMENT OBJECTIVES:** The objective for management of wildlife and fish habitat would be to maintain and enhance fish and wildlife resources so that forage production and quality of rangelands and fish and wildlife habitat would be maintained or improved to provide for diversity of wildlife resources.

The objective for management of wetlands/riparian areas would be to achieve a healthy and productive condition for long-term benefits and values in concert with range, watershed, and wildlife needs.

**MANAGEMENT ACTIONS:** Habitat would be provided to accommodate increasing the Sublette antelope herd.

Habitat protection and management for streams, standing waters, wetlands, and terrestrial habitat to enhance these habitats for all wildlife and sensitive species would be provided (see Table 2-10 and Table 2-29). Wildlife habitats would be maintained or improved through restrictive habitat alteration, restrictive stipulations, land withdrawals, and/or land exchanges.

Habitat for threatened, endangered, and sensitive plant and animal species would be provided, maintained, or improved through vegetative manipulation, mitigation measures, or other management actions including habitat acquisition and easements.

Disturbed or altered habitat would be restored with the objective to attain desired native plant communities, while providing for wildlife needs and soil stability.

## ALTERNATIVES

Big game crucial winter ranges and parturition areas would be protected to ensure their continued useability by limiting activities during seasons of use and, if necessary, the amount of habitat disturbed.

Sage grouse leks and within ¼ mile of the lek would be closed to surface disturbing activities (e.g., mineral development activities, roads, pipelines, powerlines, etc.). Seasonal restrictions within a 1.75-mile radius (447,170 acres) from leks to protect nesting habitat would apply (Table 2-10 and Table 2-29).

Seasonal restrictions for surface disturbing activities to protect game fish and special status fish populations during spawning would be applied as necessary (2,520 acres).

Nesting raptors would be protected by restricting activities within a ½ to 1 mile radius of active or historic raptor nesting sites (depends on species) (260,020 acres) (see Table 2-10). Active or historic raptor nesting sites would be protected and managed for continued nesting activities (Table 2-29).

The CMA with the WGFD for annual monitoring, maintenance, and development of additional waters would continue as needed. Livestock water developments would be modified or protected to enhance wildlife habitat and to maintain or enhance water quality.

Livestock water developments would be restricted in big game winter range (approximately 1.5 million acres) to avoid summer use of crucial wildlife winter forage. Livestock grazing use levels would be established for all important wildlife habitats.

Special management and riparian management enclosures would be maintained as needed, and existing enclosure plans for enhancement of wildlife habitat would be implemented. Forage (AUMs) within all enclosures would be withdrawn from livestock use in the respective grazing allotments.

Aquatic, wetland, and riparian habitat would not be suitable for disposal unless opportunities exist for land exchange for lands of equal or better value. Additional lands along perennial waters and wetlands would be acquired. The "no net loss of wetlands" policy would apply. Executive Order 11990 for the protection of wetlands would apply. Water rights would be pursued as appropriate for BLM water developments.

Riparian habitats and wetlands would be managed to achieve a healthy vigorous condition (95,550 acres). About 80 percent of riparian areas would achieve proper functioning condition.

Fences that are documented to be a problem to big game migration would be modified to meet BLM fence standards within 4 years of problem identification.

No animal damage control activities would be initiated. Minimum viable predator populations would be maintained. M-44's would not be permitted.

Mitigation and habitat improvement plans would be developed for high development oil and gas areas to mitigate wildlife habitat losses. Such actions as preparing transportation plans and reclaiming roads, seeding, and vegetation enhancement (vegetation treatments, fencing), water developments, and reclamation actions to reduce the amount of existing disturbance would be considered. Areas identified for consideration of such plans include the Little Colorado Desert, including the Fontenelle II and Blue Forest units, Nitchie Gulch, Wamsutter Arch, and Patrick Draw areas.

See other resource management prescriptions in this document for other restrictions that may apply to wildlife management activities.

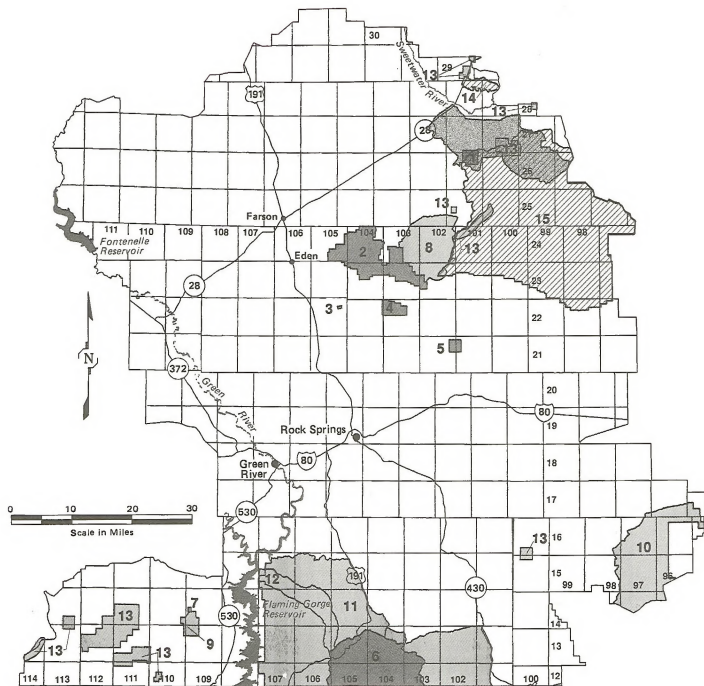
## Special Management Areas

### Candidate Plant Species (31,340 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the candidate plants ACEC would be to protect candidate plant species and their crucial habitats.

**MANAGEMENT ACTIONS:** About 440 acres of actual plant locations of the four named plants (*Arabis pusilla*, *Astragalus proimanthus*, *Descurainia torulosa*, or *Thelesperma pubescens*) and about 30,900 acres of potential habitat for the four named plants would be recommended for ACEC designation.

Known locations of candidate plant species communities (33 locations, about 440 acres) (see Map 55) would be closed to: 1) surface disturbing activities that could adversely affect the candidate plant species and their habitat (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines, etc.) (Table 2-29 and Table 2-5); 2) the location of mining claims (withdrawal from mineral location would be pursued); 3) mineral material sales; 4) the use of explosives and blasting; 5) off-road vehicular travel including those used for geophysical exploration activities; 6) oil and gas leasing or any other surface mining mineral activities or related facilities; and 7) fire suppression other than use of existing roads and trails.



**Existing ACECs**

- 1 Oregon Buttes
- 2 Sand Dunes
- 3 White Mountain Petroglyphs
- 4 Cedar Canyon
- 5 Natural Corral
- 6 Red Creek
- 7 Pine Spring

**Proposed South Pass Historic Landscape**

**Proposed ACECs**

- 8 Steamboat Mountain
- 9 Pine Spring Expansion
- 10 Monument Valley
- 11 Sage Creek
- 12 Currant Creek
- 13 Candidate Plant Species

**Other Areas**

- 14 Lander Cutoff
- 15 Red Desert Area

**Map 55**  
**Alternative C**  
**Special Management Areas**  
**Green River Planning Area**

Note: Tri-State Monument is composed of Currant Creek, Red Creek, and Sage Creek



## ALTERNATIVES

The area would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the plant species.

For those plants in the ACEC, searches would be conducted for additional areas plant locations. Habitat needs would be determined and actual prescriptions would be specified. As new populations of the four recommended plant species would be identified, these would be added to the ACEC. After searches, boundaries would be adjusted to actual plant locations and habitat needs. Should a plant species be de-listed, the ACEC part or portion attributed to that plant species would be discontinued. The window for inventory would be from May through August.

Any management actions on potential habitat of candidate plant species communities (about 30,900 acres) would be closed to surface disturbing activities that could adversely affect the candidate plant species and their habitat (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and Table 2-5); to the location of mining claims (withdrawal from mineral location would be pursued); to mineral material sales; to the use of explosives and blasting; to off-road vehicular travel including those used for geophysical exploration activities; to activities listed above where candidate plants and important habitat are located; and to fire suppression other than use of existing roads and trails.

Searches prior to projects and activities would be required.

The area would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the plant species.

Approximately 1,900 acres on Pine Butte would be acquired to enhance management for *Descurainia torulosa*.

Actual plant populations would be closed to geophysical vehicles. Geophysical activity would be managed to avoid potential plant population sites. No surface charges would be allowed on actual plant locations.

### Cedar Canyon ACEC (2,550 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Cedar Canyon ACEC would be to provide protection and enhancement of cultural values, scenic values, and wildlife habitat.

**MANAGEMENT ACTIONS:** The Cedar Canyon ACEC would be retained.

The entire ACEC would be open to consideration for fluid mineral leasing with restrictions to protect cultural and wildlife values, particularly raptor, big game winter range, and watershed values (Table 2-10). The ACEC would be closed to leasing for coal and closed to consideration for sale of mineral materials.

Prescribed management actions for livestock grazing would include continuous monitoring and establishment of riparian objectives.

Highly erodible soil areas throughout the ACEC would be managed to maintain or reduce erosion levels and improve vegetation cover. Guidelines necessary to protect these areas would be developed. Engineering design and mitigation plans would be required for surface disturbing activities on slopes in excess of 12 percent grade would be required to ensure unacceptable impacts would not occur to ACEC values. Designated roads would be upgraded, maintained, and properly surfaced in accordance with standards.

In conformance with ACEC objectives, the various recreational activities (e.g., camping, picnicking) that occur in the area would be developed, maintained, preserved, or enhanced to provide for an optimum and satisfying visitor experience. Facilities and projects would be signed to provide information about sites in the area and directions for travel through the ACEC.

The ACEC would be closed to over-the-snow vehicles. No additional road miles (net gain of road mileage) and disturbed acreage would be achieved. Lands would be acquired to enhance access to this ACEC. Signing and closing of all nonessential roads and trails would be accomplished along with providing legal and physical access.

The ACEC would be managed in accordance with Class II VRM prescriptions, with visual resource management standards to protect, maintain, and enhance the visual resource values. All future facilities would be designed to blend with the landscape, painted, and seeded to keep visual resource impacts to a minimum.

The petroglyph site plus a 1/4 radius (500 acres) would be closed to: 1) surface disturbing activities that could adversely affect the petroglyph site (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and Table 2-5); 2) to visual intrusions; 3) to the location of mining claims (withdrawal from mineral loca-

## ALTERNATIVES

tion would be pursued); 4) to mineral material sales; 5) to off-road vehicular travel including those used for geophysical exploration activities (this includes the 1/2 mile of road to the petroglyphs); 5) to the use of explosives and blasting and vibroseis operations; and 6) to the use of fire retardant chemicals containing dyes.

The 20-acre petroglyph site would be open to only portable geophysical activities, that involved only pedestrian traffic, and hand-carried cables and recording devices.

The remainder of the ACEC (2,050 acres) would be an avoidance area for surface disturbing activities, but activities could be considered provided no unacceptable adverse impacts to ACEC values would occur and activities could be reclaimed and blend with the landscape. New rights-of-way should follow existing roads and rights-of-way wherever feasible (Table 2-5).

The area would be open to seismograph activity including the use of explosives and blasting, provided ACEC values could be protected.

Off-road vehicular travel, including those used for geophysical exploration activities, would be limited to designated roads and trails. Off-road vehicle activities would be restricted during winter and spring to protect wildlife values.

### Greater Sand Dunes ACEC (41,640 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Greater Sand Dunes ACEC would be to preserve and protect the integrity of their unique values for future use and enjoyment, including the unusual geological features associated with the sand dunes and the Boar's Tusk, and the geological and biological interrelationships supported by the dunes, especially the Steamboat desert elk herd, mule deer herd, and other dependent plants and animals.

**MANAGEMENT ACTIONS:** The Greater Sand Dunes ACEC would be retained.

### General ACEC

The ACEC would be managed for Class II VRM values. The visual impacts of existing facilities (e.g., producing wells) would be evaluated and, to the extent reasonable, the impact mitigated.

Any surface disturbing activities within the Wasatch and Green River Formations would require a paleontological

clearance. Surface disturbing activities would avoid the area within 1 mile or visual horizon of recreation sites.

The ACEC and the area within one mile or the visual horizon of the ACEC (70,850 acres) would be an avoidance area for new rights-of-way. In particular, large kilovolt powerlines would be managed to avoid the ACEC. Oil and gas development prescribed for the Eastern Portion is excluded from this restriction.

The ACEC would be closed to mineral material sales and subject to valid existing rights. The public lands within the ACEC (41,640 acres) would be closed to mining claim and mineral location. Withdrawals would be pursued (Table 2-6).

Livestock grazing would continue at established grazing levels. Monitoring of grazing use within the allotments to ensure utilization maintenance and improvement of the vegetative resource would occur. Key plant species utilization would not exceed 50 percent of the total annual growth.

Maintenance and use of existing necessary range-land improvements would be allowed. Proposed range-land improvements must first be part of an allotment management plan, be consistent with the objectives of the ACEC, and have an environmental assessment prepared which would consider the authorization of range-land improvement construction and/or maintenance, and the use of motor vehicles, motorized equipment, and mechanical transport.

Materials used for new or existing improvements must harmonize with the natural character of the area to reduce the impact of artificial objects on the natural environment.

Wild horse use in the ACEC would be managed as part of the natural ecosystem and would be consistent with the Divide Basin Wild Horse Management Plan and ACEC objectives. No traps would be constructed in the entire ACEC.

To support the diversity of wildlife species occurring within the ACEC, wildlife habitat would be protected, maintained, and enhanced. Crucial winter range in the ACEC area would be maintained as an essential component to the Steamboat Mountain elk herd.

Habitat improvement projects on the ponds for bird, amphibian, and mammal use would be developed after habitat condition and project suitability were determined.



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Interpretive materials and educational programs including a wildlife picture brochure would be developed to describe the wildlife and cultural resource values of the 41,840-acre ACEC.

Native vegetation would be maintained and protected to allow natural succession to continue free from unnecessary surface disturbance. Revegetation of disturbed areas with big sagebrush and other adapted shrub seeds would be required where appropriate to help improve big game habitat.

A diversity of non-motorized recreation uses, including hiking, bird-watching, photography, sightseeing, and hunting, would be encouraged. Appropriate recreation facilities would be developed and maintained. Two roads would be designated as part of the Tri-Territory backcountry byway (see Map 20). Camping would be restricted to the BLM 14-day limit, and subject to "Pack In-Pack Out" requirements for trash, etc. (see Recreation Resource Management for this alternative).

### Western Portion

Management of the ACEC included in Buffalo Hump and Sand Dunes WSAs (25,250 acres) in the western portion of the ACEC) is guided by the "Interim Management Guidelines for Lands Under Wilderness Review." Wilderness management would not be addressed unless management of the area is more stringent than either the interim management policy or wilderness policy.

The 25,250-acre western part of the ACEC would be closed to motorized vehicle travel, including over-the-snow-vehicles, to maintain the unique naturalness, solitude, and primitive and unconfined recreational opportunities.

This portion would remain closed to oil and gas leasing (Table 2-29) and geophysical activities.

About 4,360 acres that are in the coal potential area would be unsuitable for further consideration for coal leasing.

Lands would be acquired through exchange to improve the manageability of the area (1,920 acres).

### Eastern Portion

The eastern portion of the ACEC (about 16,390 acres) would be open: 1) to mineral leasing and development activities, subject to constraints to protect ACEC values; 2) for further construction and development and

surface occupancy which would be confined primarily to the existing area of development (about 6,000 acres), and to non-stabilized sand areas only in the remaining 10,390 acres; 3) for additional producing wells or temporarily shut-in wells provided the number would not exceed three wells per section within the existing developed area (approximately 6,000 acres) and one well per section in the undeveloped area to the east (approximately 10,390 acres) (the authorizing officer may consider additional wells if a site specific analysis determines that ACEC values would be retained; unitization may be required prior to drilling; 4) to activities that would conform with visual resource management classifications and prescriptions and consider the affects to visual resources; and 5) to geophysical activities (including vehicular travel) provided resource protection would be ensured and actions conform with the ORV plan.

Developments would not preclude access to or use of developed and semi-developed recreation sites. Actions would be evaluated on a case-by-case basis.

This area would be closed to surface mining and any surface facilities related to coal activity (about 9,840 acres). Leasing and subsurface mining for coal could occur.

Surface disturbing activities, geophysical activities, drilling, completion, and production facility installation activity would be restricted on crucial big game winter ranges and birthing areas Table 2-10. Exception from this restriction may be approved if conditions described in Appendix 7-1 apply. Once an oil and gas drilling/completion operation starts, it would be allowed to be completed into or through the winter. Decision points for shutdown due to unacceptable winter conditions would occur between pad construction and drilling startup, and between drilling/completion and facility installation.

Surface water, soils, and shallow aquifers would be protected from development activities by utilizing such practices as a closed drilling system. Access to ponds for the purpose of depleting water would not be authorized.

All new pipelines and powerlines within the existing area of development would be buried adjacent to access roads or within existing concentration areas containing such lines. All new pipelines within the stabilized dune areas would be installed on the ground as surface lines to avoid unnecessary disturbance of vegetation. Powerlines would be buried. Existing surface pipelines would be monitored by the oil and gas operators and those exposed pipe segments, which could be hazardous to ORV users, would be marked to improve visibility.

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Any proposed activity or surface use that would involve surface disturbance (e.g., construction activities, such as roads, well pads, pumping or storage facilities, pipelines, or geophysical exploration etc.) would be accompanied by appropriate engineering design, geotechnical analysis, mitigation planning, etc.

Abandoned pipelines, unnecessary facilities (e.g., snow fence), etc., in unstabilized dune areas would be removed.

In cooperation with the oil and gas operators, a recreation user map would be developed that shows the locations of aboveground facilities (e.g., pipelines, well production facilities, snow fences, etc.).

About 10,390 acres would continue to be designated open to off-road vehicle travel on the active sand dunes and limited to existing roads and trails on 6,000 acres in the stabilized dune areas.

### Crookston Ranch and Boar's Tusk

The area within a 1/2 mile radius of Crookston Ranch and the Boar's Tusk (590 acres) would be closed to surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and Table 2-5); to mineral material sales for sand, gravel or other types of construction or building materials; to further consideration for coal leasing; and to the use of explosives and blasting. Additionally, the area within a 1/2 mile radius of Boar's Tusk would be closed to blasting and explosive charges (about 500 acres).

Lands within a 1/2 mile radius of the Crookston Ranch and the Boar's Tusk (590 acres) would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

Off-road vehicle travel would be limited to existing roads and trails around these two sites, except for the road around Boar's Tusk which would be closed.

Maximum fire suppression activity would be used to protect the standing historic structures at Crookston Ranch.

The Boar's Tusk-Killpecker Sand Dune field (about 1,400 acres) would be managed for natural and geologic values and would not be leased for coal.

### Monument Valley Area (64,300 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Monument Valley Area (64,300

acres) would be to manage the area as an ACEC to provide management emphasis for the protection of wildlife, geologic, cultural, watershed, scenic, and scientific values. Other uses would conform to management requirements for these values.

**MANAGEMENT ACTIONS:** The Monument Valley area would be designated an ACEC.

The wilderness study area acreage will not be identified for specific management unless the management is more stringent than either the interim management policy or wilderness management.

The entire area would be open to: 1) consideration for further mineral exploration, leasing, and development and 2) consideration for mineral material sales with the same constraints as applied to other mineral activities.

The area would be given first priority for a Class II cultural resources inventory. Specific management direction would be provided for cultural values based on the inventory. The standard Section 106 process would also apply. A paleontological survey would be required prior to surface disturbing activities.

Slopes greater than 20 percent and on highly erosive soils (about 1,400 acres) would be closed to: surface disturbing activities that could adversely affect ACEC resources (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and Table 2-5); and to the location of mining claims (withdrawals would be pursued as necessary) (Table 2-6).

The remainder of the area would be open to consideration of surface disturbing activities provided a plan can be developed to mitigate adverse affects to the resource values (Table 2-10).

The entire area would be managed for Class II visual resource values, and all management actions would be designed and located to blend into the natural landscape and to not be visually apparent to the casual viewer.

Off-road vehicle travel would be limited to designated roads and trails. No recreation sites would be developed. Limited interpretive signing would be accomplished (mostly roads and access routes).

No improvements or wild horse traps would be allowed in the areas closed to surface disturbing activities. In the remaining area, improvements would be considered with protection provided for slopes, raptors, and watershed resources. Designated roads and trails would be utilized for access.

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### Natural Corrals ACEC (1,276 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Natural Corrals ACEC would be to protect the cultural, historical, recreation, and geological values within the area. Other resource actions would comply with the objectives, including any restrictions required to protect the values of the ACEC.

**MANAGEMENT ACTIONS:** The Natural Corrals ACEC would be retained.

The entire ACEC would be open to consideration of oil and gas leasing.

The area would be closed to surface disturbing activities that could adversely affect ACEC resources (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and Table 2-5); to consideration for coal leasing activity due to conflicts with raptor nests, sites on the National Register of Historic Places, and conflicts with crucial range for deer and elk; and to mineral material sales.

The existing withdrawal would be retained, closing 357 acres to the location of mining claims (Table 2-6). The public water reserve withdrawal in section 12 would be revoked in the future since the land is now patented. A filing for a water right would be pursued if it is deemed important.

The 20-acre NRHP site would be closed to geophysical activities.

The ACEC would be open to for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the resources. Activities would be designed to increase public awareness of the significance of the area.

The cultural and historical values of the NRHP site and the surrounding area within the ACEC would be protected by closing the area to surface disturbing activities that would adversely affect the cultural resources. Crucial winter range seasonal restrictions and raptor nesting restrictions would apply to surface disturbing activities.

The existing road/trail from the spring located in the SE $\frac{1}{4}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$  of Section 18 and the designated archeological NRHP site (20 acres) would remain closed to vehicle use. Off-road vehicle use in the remainder of the area would be managed as limited to existing roads and trails. The ACEC would be open to over-the-snow vehicles.

Prescribed management actions for livestock grazing would include continuous monitoring, establishing riparian objectives, and obtaining cooperative riparian management. The wild horse herd management prescription would consist of monitoring to ensure resources would be protected.

In conformance with the ACEC objectives, the various recreational activities such as camping, picnicking, winter sports, hunting and fishing opportunities that occur in the area would be developed, maintained, preserved, or enhanced to provide for an optimum and satisfying visitor experience. Camping would be restricted to 14 days. A "Pack In-Pack Out" policy would apply for camping. Camping around the spring would be restricted. The area would be managed for Class IV visual resource values.

### Oregon Buttes ACEC (3,450 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Oregon Buttes ACEC would be to protect and manage the scenic integrity as a historic landmark. In addition, this ACEC would serve to protect the significant wildlife values that are found in the area.

**MANAGEMENT ACTIONS:** The Oregon Buttes ACEC would be retained as a portion of the South Pass Historic Landscape proposed ACEC.

A portion of the ACEC is within the boundaries of a WSA. Wilderness management, recommendations, and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The wilderness study area acreage will not be identified for specific management unless the management is more stringent than either the Interim Management Policy or wilderness management.

The area would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and Table 2-5); to mineral material sales for sand, gravel, or other types of construction or building materials; and to off-road vehicle travel, including those utilized for seismograph operations.

The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area. Seasonal restrictions for raptors and big game parturition areas would apply (Table 2-10).

The Oregon Buttes area would be managed under the prescriptions for VRM Class II values. Management

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actions would be designed to blend into the natural landscape and retain the existing character of the landscape.

### **Pine Springs ACEC (6,030 acres)**

**MANAGEMENT OBJECTIVE:** The objective for management of the Pine Springs ACEC would be to enhance protection of cultural, historic, and prehistoric resource values.

**MANAGEMENT ACTIONS:** The existing Pine Springs ACEC would be expanded to 6,030 acres.

Approximately 5,200 acres of the Pine Springs Expansion area are in the Devils Playground/Twin Buttes WSA which is managed under the "Interim Management Policy for Lands Under Wilderness Review." Wilderness management will not be addressed unless management of the area is more stringent than either the interim management policy or wilderness policy.

The area would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and Table 2-5); to mineral location and an additional withdrawal of 730 acres pursued (Table 2-6); to mineral material sales for sand, gravel, or other types of construction or building materials; and to off-road vehicle travel, including those utilized for seismograph operations.

The existing Pine Springs site (90 acres) would be closed to all geophysical operations and to the use of explosives and blasting.

The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the area; maintenance of the existing spring development; and additional spring developments if the action would be in conformance with cultural values.

The entire area would be managed for Class II visual values, and management actions on the lands classified as VRM Class II lands would be designed to blend into the natural landscape and retain the existing character of the landscape.

### **Red Desert Watershed Area (341,060 acres)**

**MANAGEMENT OBJECTIVE:** The management objective for the Red Desert Watershed Area would be

to continue to manage the area (341,060 acres) for multiple use values with emphasis on visual resources, watershed values, and wildlife resources. Resource prescriptions and objectives throughout this alternative would apply (Map 55).

**MANAGEMENT ACTIONS:** The boundary that would be considered the Red Desert Watershed Area would be adjusted to include the public lands in the Great Divide Basin watershed just north of the checkerboard boundary.

A portion of the Red Desert Watershed Area encompasses 93,000 acres of six WSAs (Alkali Draw, Alkali Basin-East Sand Dunes, Honeycomb Buttes, Oregon Buttes, Red Lake, and South Pinnacles). Wilderness management recommendations and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The Resource Management Plan would not address wilderness recommendations or management prescriptions for the WSAs. The wilderness study area acreage would not be identified for specific management unless the management is more stringent than either the interim management policy or wilderness management.

The area would be managed to ensure developments and activities conform with the concepts of open space. The visual resource values of the area would be retained and site specific visual resource reviews (inventories) would be conducted prior to allowing activities that may affect these values.

Mineral exploration and development, surface disturbing activities and seismic activities would continue where acceptable subject to the management guidelines provided in the Minerals section. Approximately 2,500 acres would be closed to surface disturbing activities to protect candidate plants and ACEC values in Oregon Buttes and 46,000 acres in the South Pass Historic Landscape (Table 2-29). Seasonal restrictions for protection of raptors, big game crucial winter range, and calving/fawning areas be managed as shown in Table 2-10. The exception criteria described in Appendix 7-1 would apply.

Approximately 2,860 acres could be developed for coal; however, minimal development would occur (see Coal Decisions). Most of the area would be open to consideration for salable minerals except about 7,760 acres which would also be closed to mineral location (part of South Pass Historic Landscape). The existing coal and stock driveway withdrawals would be revoked.

Rights-of-way would be managed to avoid about 93,000 acres of the South Pass Historic Landscape and



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ACECs. The remainder of the area would allow rights-of-way with consideration given to wildlife, watershed, cultural, and scenic resources. Overhead powerlines would not be permitted (Table 2-5).

Off-road vehicle travel would be managed to provide opportunities in conformance with other resource objectives. About 93,000 acres would be closed to ORV travel and the remainder would be limited to existing or designated roads and trails. Various recreational activities such as camping, picnicking, hunting, and winter sports, would be developed, maintained, preserved, or enhanced to provide for an optimum and satisfying visitor experience. Opportunities to maximize the visitors recreation experience would be pursued. A Tri-Territory Loop backcountry by-way would be established.

Candidate plant species, the ACEC values in Oregon Buttes and cultural resource sites such as the South Pass Historic Landscape would be protected. Specific management prescriptions for those areas may be found in the particular special management area section of this document.

### **South Pass Historic Landscape (87,580 acres)**

**MANAGEMENT OBJECTIVES:** The management objective for the area would be to manage the area to protect the visual and historical integrity of geographic features and historic trails and surrounding viewscape.

**MANAGEMENT ACTIONS:** The South Pass Historic Landscape area would be designated as an ACEC (87,580 federal surface acres) and managed as a historic landscape with primary consideration for cultural, historic, visual, and scenic values in association with historical context.

The South Pass Historic Landscape would encompass the viewshed along the Oregon and Mormon Pioneer trails and south of the trail to include the major landmark features of Oregon Buttes and Continental Peak (Map 55).

The entire area would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the landscape.

The visual values of the Highway 28 visual corridor (3 linear miles) and Oregon Buttes would be retained.

About 46,180 acres would be closed to: 1) surface disturbing activities that could adversely affect the viewshed (e.g., activities associated with mineral explo-

ration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and Table 2-5); and 2) linear rights-of-way and the area would not be considered a preferred route for linear facilities. Off-road vehicle travel would be limited to designated roads and trails acres.

Vehicles used for geophysical explorations, or similar activities, could cross the trails, provided a site specific analysis determines that no adverse effects would occur. Geophysical activities up to 300 feet of the trails could be considered provided a site specific analysis determines that visual intrusions and adverse effects would not occur; however, actual geophysical activity such as vibroseis, explosives, blasting, or drilling could not occur directly on the trails.

Management of the area included in three WSAs, the Oregon Buttes, Honeycomb Buttes, and White Horse Creek WSAs (41,400 acres in the southern portion of the area), is guided by the Interim Management Guidelines for Lands Under Wilderness Review. Wilderness management would not be addressed unless management of the area is more stringent than either the interim management policy or wilderness policy. This part of the proposed ACEC would be closed to motorized vehicle travel, including over-the snow-vehicles to maintain the unique naturalness, solitude, and primitive and unconfined recreational opportunities.

This portion would remain closed to oil and gas leasing (Table 2-29), mining claims, and geophysical activities. Withdrawals would be pursued as necessary (Table 2-6).

The South Pass Historic Landscape (the actual South Pass geographic location, about 5,260 acres) would be closed to: 1) surface disturbing activities that could adversely affect the viewshed (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and Table 2-5); 2) linear rights-of-way and the area would not be considered a preferred route for linear facilities; 3) mineral material sales; and 4) mining claims (withdrawal from mineral location would be pursued). Off-road vehicle travel would be limited to designated roads and trails. The actual boundaries would be determined during activity planning.

Much of the area would be open to exploration and development of locatable minerals. A plan of operations would be required to address measures to mitigate effects to the viewscape, before any mine claim activity would be allowed.

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Activities would conform with the requirements of VRM Class II values and all management actions would be designed and located to blend into the natural landscape and to not be visually apparent to the casual viewer.

The exact boundaries of the landscape would be determined during activity planning.

The Oregon Buttes ACEC (3,450 acres) would become a portion of the South Pass Historic Landscape proposed ACEC (see the Oregon Buttes ACEC section).

### Steamboat Mountain Area (43,010 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the Steamboat Mountain Area would be to provide suitable habitat to maintain the continued existence of the Steamboat elk herd (Map 55).

**MANAGEMENT ACTIONS:** The Steamboat Mountain Area would be designated an ACEC.

The area would be closed to oil and gas leasing, coal leasing, mineral material sales, and mineral location and development.

The area would be closed to surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, structures, powerlines, etc.) (Table 2-29 and Table 2-5).

The area would be open to actions that would enhance management objectives including consideration of activities such as fencing interpretive signs, or barriers. Activities would be restricted seasonally on crucial big game winter ranges and birthing areas. Exception from this restriction may be approved if conditions described in Appendix 7-1 apply.

Linear rights-of-way and geophysical activities could be acceptable if impacts to the elk could be mitigated.

Off-road vehicle travel would be limited to designated roads and trails and transportation planning would be completed. The May 1-July 1 seasonal closure for off-road vehicle travel currently in effect would still apply.

All activities would conform with the requirements of VRM Class II values and all management actions would be designed and located to blend into the natural landscape and to not be visually apparent to the casual viewer.

The unique geological and ecological features in the area would be protected and public interpretation of these features provided.

Vegetation management would be designed to maintain, preserve, or enhance big game forage and cover requirements. Fire activities would be designed to meet these activities. Harvest of forest products on Steamboat Mountain would be allowed only if elk herd management objectives could be met. Dead standing trees would be managed under the "Animal Inn" program to help maintain biological diversity. Reseeding and reforestation within the proposed ACEC would be done with native species.

Any additional forage that becomes available would be allocated for wildlife use as first priority to improve quality and quantity of forage. Wild horse herds would continue to be maintained within wild horse management population objectives.

An area of overlapping elk crucial wintering and parturition areas within the herd unit (30,000 acres) outside of the Steamboat Mountain proposed ACEC (Map 55) would allow for progressive development of one or two areas at a time. Satisfactory abandonment and reclamation of an area or field would be required prior to developing another area.

### Tri-State Monument Area (293,220 acres)

The Tri-State Monument area would consist of the Currant Creek/Sage Creek watersheds, portions of Pine and Little Mountain watershed areas, and the existing Red Creek ACEC.

**MANAGEMENT OBJECTIVE:** The management objective of the Tri-State Monument area would be to improve and/or enhance watershed and channel stability and to protect and maintain watershed quality and to minimize sedimentation from human activities. Red Creek and Currant Creek would be enhanced and feasibly managed through applied management practices and improvements. All resource uses would be managed in support of watershed and Colorado River cutthroat trout management objectives.

**MANAGEMENT ACTION:** The Tri-State Monument Area, including the existing Red Creek ACEC, would be designated an ACEC.



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### General Area

The actions listed under this general heading apply to all portions of the Tri-State Monument Area unless otherwise noted.

The proposed Tri-State Monument ACEC would be managed as an avoidance area for linear and surface disturbing rights-of-way to protect and enhance management of wildlife, scenic, fisheries, and watershed concerns except for the Currant Creek Drainage, and Pine and Little Mountains watershed areas, which would be exclusion areas (see Table 2-5). The area would be closed to material sales.

A 131,780-acre withdrawal would be pursued which includes the Currant Creek drainage, Sage Creek watershed, and Red Creek ACEC.

The area would be closed to coal leasing.

The area would be open for consideration of activities such as fencing, interpretive signs, barriers, or sediment structures to meet resource objectives.

With the exception of the 8,020-acre area within the WSA which is closed to ORV use, the entire Tri-State area would be limited to designated roads and trails for off-road vehicle travel, and transportation planning would be done.

Vegetation treatments including those along the inner gorges of intermittent and ephemeral drainages would be allowed to meet livestock objectives.

The existing levels of use for livestock grazing and timber harvest would be maintained. Riparian areas would be improved. The maximum amount of vegetation treatment resulting in converting sagebrush to grass communities would be accomplished. Some sediment structures would be constructed.

Surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) in the portion of the Currant Creek/Sage Creek area (75,900 acres) outside the Currant Creek drainage, would be allowed only if analysis indicates no unacceptable adverse impacts to resource values would occur.

Riparian areas would be improved to proper functioning condition. Timber harvest levels and harvest practices would be designed to meet watershed prescriptions. Vegetation treatments would conform with water-

shed and wildlife objectives. Approximately 38,555 acres would be treated.

Although big game habitat would improve, additional or improved forage would be reserved for watershed purposes. Big game numbers may be kept at current levels or reduced, until the watershed recovers. Threatened and endangered species and sensitive species habitat for plants and animals would be enhanced. Colorado River cutthroat trout would be re-introduced into the North Fork of Vermillion Creek. Re-introduction of other native species, such as big horn sheep, would be considered if consistent with watershed and riparian objectives.

No camping would be allowed within 200 feet of streams and springs.

Fire suppression would be limited to containment at ridgetops around Currant Creek. Firefighting equipment would be limited to designated roads and trails. Heavy equipment would not operate in areas closed to surface disturbing activities. Fires in timber stands would be suppressed immediately.

The inner gorge of intermittent and ephemeral drainages would be treated in such a manner as to leave mosaic patterns or untreated areas of vegetation. No more than 50 percent of the cover in the inner gorge area may be treated.

Herbicide loading sites would be located at least 500 feet from live water or riparian areas. Herbicide treatment of noxious weeds would require a site specific analysis and riparian vegetation damage or impacts to aquatic life would not be allowed.

### Currant Creek Portion

**MANAGEMENT OBJECTIVE:** The Currant Creek drainage would be managed for enhancement of the Colorado River cutthroat trout.

**MANAGEMENT ACTIONS:** The Currant Creek Drainage (23,740 acres) would be designated as part of the Tri-State Monument ACEC.

The Currant Creek drainage would be closed to mineral leasing, mineral material sales, sodium exploration and locatable mineral exploration and development (a withdrawal would be pursued).

The drainage would be closed to surface disturbing activities (e.g., activities associated with mineral explo-

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ration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and it would be an exclusion area for rights-of-way (Table 2-5).

Acquisitions along Currant Creek and Trout Creek, in support of Colorado River cutthroat trout, would be pursued. Off-road vehicles would be limited to designated roads and trails.

### Sage Creek Portion

**MANAGEMENT OBJECTIVES:** The Sage Creek watershed would be managed to maintain the watershed values.

**MANAGEMENT ACTIONS:** The Sage Creek Watershed (52,670 acres), which includes Little Mountain, would be designated as part of the Tri-State Monument ACEC.

The drainage would be closed to surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29). Sage Creek would be an avoidance area for rights-of-way with the exception of Little Mountain which would be an exclusion area (Table 2-5).

Off-road vehicle travel would be limited to designated roads and trails.

### Red Creek ACEC Portion (55,880 acres)

**MANAGEMENT OBJECTIVES:** The objectives for management of the area would be to: 1) reduce the amount of sediment currently being delivered to the Green River as a result of sheet and rill erosion, gullying, and channel erosion occurring in the Red Creek area, 2) improve aquatic habitat conditions along the Green River in Utah below Red Creek, 3) reduce gully and channel erosion where roads and water tables are threatened, and 4) increase vegetative production in the Red Creek Watershed.

**MANAGEMENT ACTIONS:** The existing Red Creek ACEC (about 55,880 acres), which includes a portion of Pine Mountain, would become part of the proposed Tri-State Monument ACEC.

A portion of the area is within the Red Creek Wilderness Study Area (about 8,020 acres). Wilderness management recommendations and alternatives are addressed in the Rock Springs District Wilderness Final EIS. The Resource Management Plan will not address

wilderness recommendations or management prescriptions for the WSAs. The wilderness study area acreage will not be identified for specific management unless the management is more stringent than either the interim management policy or wilderness management. Approximately 8,020 acres would remain closed to off-road vehicle travel.

The Red Creek area (55,880 acres) would be closed to: 1) all mineral leasing (Table 2-29); 2) mineral material sales; 3) exploration for sodium; 4) exploration and development of locatable minerals and 5) surface disturbing activities (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.). Red Creek would be an avoidance area for rights-of-way and Pine Mountain would be an exclusion area (Table 2-5).

The right-of-way concentration area through the Red Creek ACEC would be closed. An alternate route east and a window south along Highway 430 would be established.

Those areas within the Red Creek watershed that have been identified as 1) highly erosive soils, 2) subject to slumping, 3) slopes greater than 25 percent, and 4) riparian areas, would be protected to minimize accelerated erosion and increased sedimentation into the Green River/Colorado River system. Approximately 50,120 acres or 74 percent of the watershed would be affected. Roads and trails in these areas would be closed and reclaimed with the exception of the main county road (County road 4-62) through Richard's Gap and the road to Red Creek Ranch (County road 4-27). Transportation planning would be done for these two routes that would include proper road location, construction, design, and reclamation.

Portions of the Red Creek drainage would be unavailable for livestock grazing until riparian and water quality objectives would be met.

### White Mountain Petroglyphs ACEC (20 acres)

**MANAGEMENT OBJECTIVE:** The objective for management of the White Mountain Petroglyphs ACEC would be to protect cultural resource values from degradation and provide for wildlife and scenic values and Native American concerns. Public awareness and use of the area as an educational site would be encouraged.

**MANAGEMENT ACTIONS:** The White Mountain Petroglyphs ACEC would be retained.

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The ACEC would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites.

The ACEC would be closed to surface disturbing activities that could adversely affect it (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and Table 2-5); to the location of mining claims (and the existing withdrawal retained) (Table 2-7); to mineral material sales for sand, gravel, or other types of construction or building materials; and to the use of explosives and blasting. The ACEC would also be closed to off-road vehicular travel including vehicles used for geophysical exploration activities (Table 2-31), and to the use of fire retardant chemicals containing dyes.

The ACEC would be managed for Class II visual resource values. Management actions would be designed and located to blend into the natural landscape and to not be visually apparent to the casual viewer.

Lands within ½ mile radius of the ACEC (500 acres) would be open for consideration of activities such as fencing, interpretive signs, or barriers to ensure protection to the sites. These 500 acres would be closed to surface disturbing activities that could adversely affect them (e.g., activities associated with mineral exploration and development; construction of roads, pipelines, powerlines; etc.) (Table 2-29 and Table 2-5); to mineral material sales for sand, gravel or other types of construction or building materials; to the use of explosives and blasting; and to vibroseis activities within 300 feet of the petroglyphs site.

Off-road vehicle travel, including vehicles used for geophysical exploration and fire suppression activities, would be limited to designated roads and trails (Table 2-31).

Human activity, recreation use, etc., would be restricted from February 1 through July 31 to protect nesting raptors. Exception from this restriction may be approved if conditions described in Appendix 7-1 apply.

### Wild and Scenic Rivers Management

**MANAGEMENT OBJECTIVE:** The objective for management of wild and scenic rivers would be to protect wild and scenic river values until Congress makes a determination for inclusion into the National Wild and Scenic Rivers System.

**MANAGEMENT ACTIONS:** The portion of the Green River administered by BLM did not meet the suitability

criteria based upon the inability of the BLM to manage the area because of lack of jurisdiction. However, it would be recommended that a cooperative study between BLM, BOR, and USFWS be conducted to determine eligibility and suitability.

### Interim Management, Wild River Segments

Interim management of wild river segments would protect the wild values of the segments. Resource management objectives would protect the primitive and pristine values. Only those activities that conform with the objectives would be allowed. Intrusions would not be allowed.

Temporary cultural and paleontology activities (e.g., recordation, sampling, testing, stabilization, rehabilitation, and reconstruction) may be permitted to the extent that no permanent impacts occur to river related values.

Fires would be suppressed by "light-on-the-land" techniques. No mechanized equipment would be used to suppress fires. Chainsaws and helicopter bucket drops may be allowed if no permanent impacts occur to river values.

No timber cutting, including firewood and post/pole cutting, would be permitted within the ¼ mile corridor.

No increase in active livestock grazing preference and no new range improvements would be permitted.

No lands disposals would occur. Exchanges could be allowed for acquiring private and/or state lands within the ¼ mile corridor or between river segments; however, no BLM-administered lands within the corridor may be exchanged.

The ¼ mile corridor would be an avoidance area for surface disturbing rights-of-way.

No minerals exploration, leasing, or development would be allowed within ¼ of centerline of the river. Existing leases should be allowed to expire.

No new locatable mineral mining claims would be allowed within ¼ mile of centerline. A withdrawal from the exploration and development of locatable minerals would be pursued. No recreational dredging for minerals such as gold would be allowed. Valid existing rights (existing mining claims) would be recognized.

Geophysical exploration would be limited to foot access and placement of surface cables. No vehicles would be allowed. Surface charges may be allowed if a

## ALTERNATIVES

site specific analysis determines no adverse impacts would occur to river values.

No surface occupancy for disturbing activities would be allowed within 1/4 mile of the centerline.

No recreational development such as new campgrounds, put-in or take-out areas, or other such facilities would be allowed. No motorized vehicles would be allowed within the 1/4 mile corridor. Hiking trails may be built if there were a demand for them. Mountain biking would be allowed to the extent that activities do not damage or denigrate river related values. Hikers would be required to "pack it out"; there would be no garbage facilities. Campfires would be permitted in keeping with existing fire management regulations. Hunting and fishing would be permitted.

No vegetation treatment or manipulation may occur other than hand or aerial seeding of native species done to restore natural vegetation.

The 1/4 mile corridor would be managed to protect visual values.

The segment would be visited once a year when hiking access is possible.

No water impoundments or diversions would be permitted.

No wildlife habitat improvements would be allowed within the 1/4 mile corridor.

### Interim Management, Scenic River Segments

Interim management for scenic segments would protect scenic values. Some intrusions may be allowed if they would not be readily evident and would not adversely affect scenic values.

Temporary cultural and paleontology activities (e.g., recordation, sampling, testing, stabilization, rehabilitation, and reconstruction) may be permitted to the extent that no permanent impacts occur to river related values.

Fires would be suppressed by "light-on-the-land" techniques. No mechanized equipment would be used to suppress fires. Chainsaws and helicopter bucket drops may be allowed if no permanent impacts occur to river values.

No timber cutting, including firewood and post/pole cutting, would be permitted within the 1/4 mile corridor.

No increase in existing livestock grazing AUMs. Improvements would only be allowed if they would be compatible with scenic river values.

No lands disposals would occur. Exchanges could be allowed for acquiring private and/or state lands within the 1/4 mile corridor or between river segments; however, no BLM-administered lands within the corridor may be exchanged.

No mineral exploration, leasing, or development would be allowed within 1/4 mile of centerline of the river. Existing leases should be allowed to expire.

A plan of development would be required for all locatable mineral activity. No recreational dredging for minerals such as gold would be allowed. Valid existing rights (existing mining claims) would be recognized.

Geophysical exploration would be allowed if a site specific analysis determines no adverse effects would occur to scenic river values. Vehicles would use existing approved roads and trails only. Foot access would be required off of existing roads. Use of surface charges could be allowed if the site specific analysis determines that no adverse impacts would occur to the river values.

Surface disturbing activities could be allowed within 1/4 mile of the centerline. All surface disturbances must be compatible with river values. An approved plan would be required prior to any disturbance.

Only those recreation developments that would conform with scenic river values would be allowed. Put in or take out areas could be allowed. Motorized vehicles would be restricted to using existing roads and trails only within the 1/4 mile corridor. Hiking trails may be built if there were a demand for them. Mountain biking would be allowed to the extent that activities do not damage or denigrate river related values. Hikers would be required to "pack it out"; there would be no garbage facilities. Campfires would be permitted in keeping with existing fire management regulations. Hunting and fishing would be permitted.

No vegetation treatment or manipulation may occur other than hand or aerial seeding of native species done to restore natural vegetation.

The 1/4 mile corridor would be managed to protect visual values.

The segment would be visited once a year when hiking access is possible.



## ALTERNATIVES

No water impoundments or diversions would be permitted.

Wildlife Habitat improvements would only be allowed if they would be compatible with scenic river values.

### **Interim Management, Recreational River Segments**

Interim management for recreational segments would protect recreational values. Some intrusions may be allowed if they would not adversely affect recreational values.

Cultural and paleontology activities would be allowed if they would be compatible with recreation river values.

Fires would be suppressed using appropriate techniques if no permanent impacts occur to recreation river values.

No commercial timber or post/pole cutting would be allowed within the ¼ mile corridor. Firewood cutting for campfires within the corridor would be permitted.

No increase in existing livestock grazing AUMs. Improvements would only be allowed if they would be compatible with recreation river values.

No lands disposals would occur. Exchanges could be allowed for acquiring private and/or state lands within the ¼ mile corridor or between river segments; however, no BLM-administered lands within the corridor may be exchanged.

Subject to existing regulations, new minerals leasing, exploration, and development would be allowed in the river corridor if recreational values would not be adversely affected.

A plan of development would be required for all locatable mineral activity. No recreational dredging for minerals such as gold would be allowed. Valid existing rights (existing mining claims) would be recognized.

Geophysical exploration would be allowed if site specific analysis determines no adverse effects would occur to recreation values. Vehicles would use existing roads and trails only. Foot access would be required off of existing roads. Use of surface charges would be allowed if site specific analysis determines no adverse effects would occur to recreation values.

Subject to existing regulations, surface disturbing activities would be allowed in the river corridor if site specific analysis determines no adverse effects would occur to recreation values.

New recreation developments or improvements to existing campgrounds could occur. Recreation use would be encouraged to the extent consistent with protection of the river environment. Public use and access may be regulated and distributed where necessary to protect and enhance recreation river values.

No vegetation treatment or manipulation may occur other than hand or aerial seeding of native species done to restore natural vegetation.

The ¼ mile corridor would be managed to protect visual values.

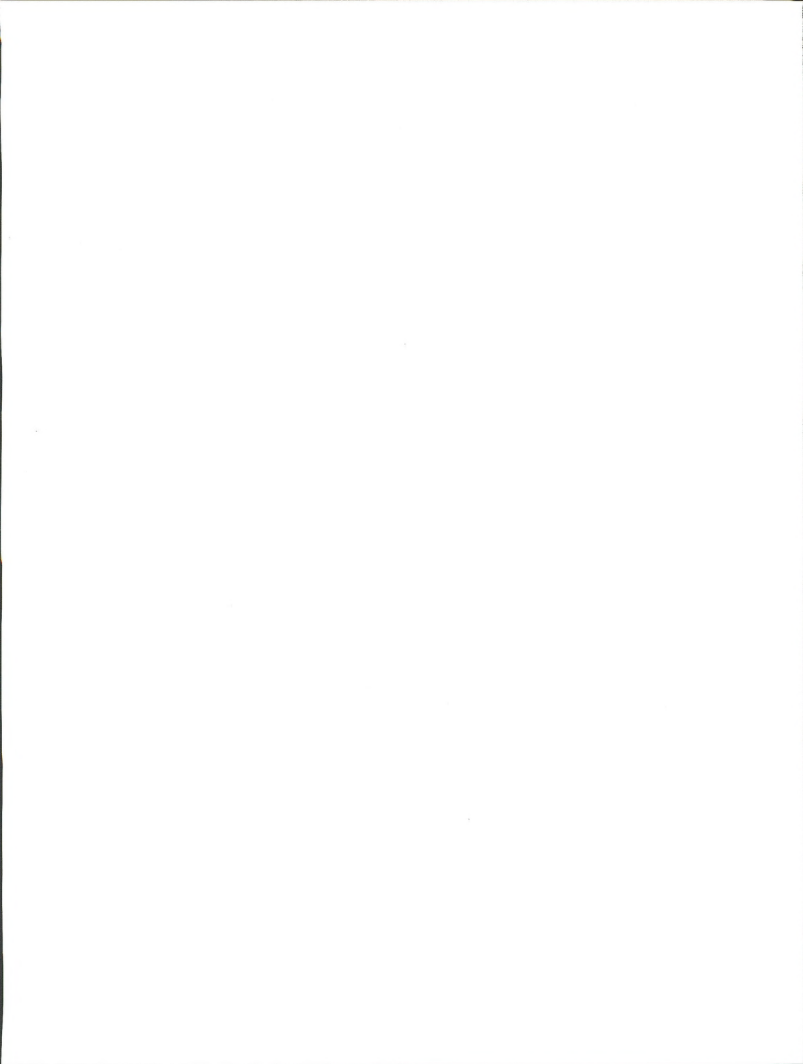
The segment would be visited monthly when driving or snowmobile access is possible.

No water impoundments or diversions would be permitted.

Wildlife habitat improvements would be allowed if they would be compatible with recreation river values.

### **Green River**

Consider a joint effort with the Bureau of Reclamation and U.S. Fish and Wildlife Service to review the Green River for potential wild and scenic river characteristics. Cooperate on the formation and management of a greenbelt area.





## CHAPTER 3

# AFFECTED ENVIRONMENT

Chapter 3 describes environmental components that influence the resolution of planning issues or that would be affected by the management actions presented in Chapter 2. Environmental components that would not be affected or that are not important to the resolution of planning issues are not covered in detail.

More detailed information about the affected environment is contained in the management situation analysis (MSA) for the Green River planning area and is available for review at the Green River Resource Area Office.

## CLIMATE AND AIR QUALITY

### Climate

The climate of the Green River planning area is generally dry continental temperate. Most days are dry and sunny, with weather fronts of Pacific origin. Climatic setting varies so that as elevation increases, lower average temperatures and higher average precipitation occur. The lowest central area supports a desert ecosystem. Most of the rest of the area is semi-arid steppe, and surrounding mountains support more lush montane and alpine ecosystems.

Precipitation and temperature are the two most important climatic parameters relating to vegetation growth. Map 56 shows the locations of stations where climate measurements are made in the planning area. According to Martner (1986), the annual mean precipitation for Green River, Wyoming, a location representative of the planning area, is 7.7 inches per year. Approximately 20 percent of this precipitation falls as snow. Peak rainfall is in May, with 38 percent of annual precipitation between April and June. Temperatures can be extreme in both winter and summer. The lowest recorded temperature was -42°F and the highest was 104°F, though the average annual temperature is a rather cool 43°F. Figure 3 shows the annual distribution of temperature and precipitation at the Green River station.

Other climatic factors which affect the ecological setting of the planning area are humidity, evaporation, and growing season length. Relative humidity over this area can be very low and averages about 55 percent. The estimated annual pan evaporation for this area is 65 to 70 inches of water. Pan evaporation indicates the amount of moisture that can be lost by water bodies, soil, and vegetation due to the atmospheric conditions. The

growing season in this area is short, making grain production and most other agricultural activities inappropriate, though the resulting grasslands have helped to foster the grazing industry. The frost-free period is a maximum of about 100 days and decreases with elevation to as low as 60 days (Map 57). While winter is long and harsh, severe snowstorms occur less here (about one per year) than further east and in areas of high elevation. Summer thunderstorms are also less frequent in this area of the state, averaging about 30 thunderstorms per year.

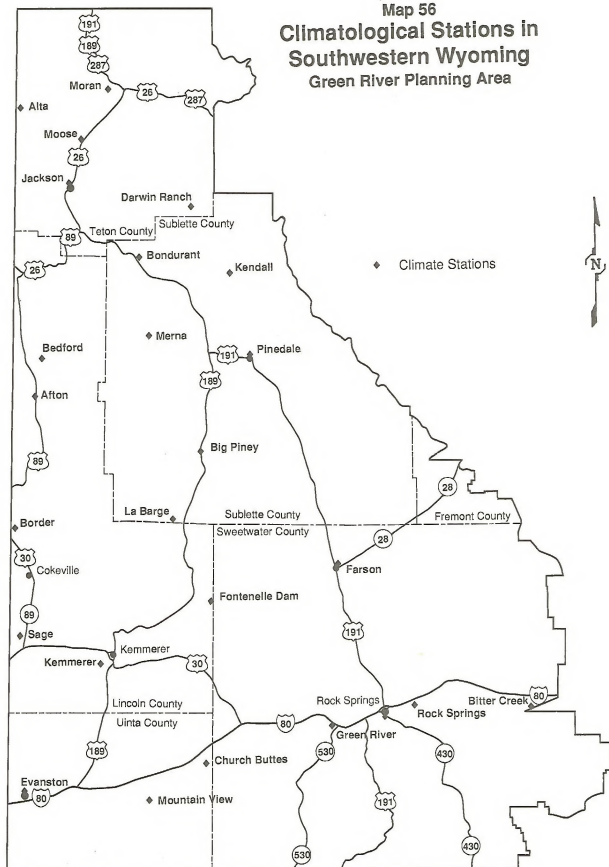
Winds in the planning area are predominantly from the west to southwest and can be quite strong. Since this area contains the lowest section of the Continental Divide between Montana and New Mexico, it is a natural funnel for storms crossing the mountains resulting in a corridor of strong winter winds from Rock Springs to Laramie. The average annual wind speed at Rock Springs is 12 mph. Figure 4 is a wind rose which shows the annual proportion of wind speeds and directions which occur in Rock Springs (Ryckaczewski, et al. 1980).

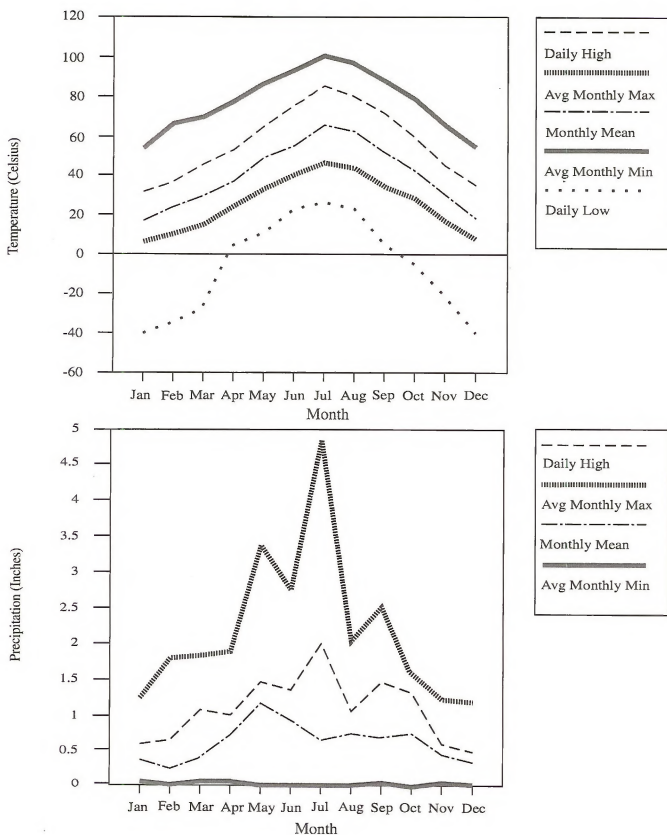
### Air Quality

Air quality in the planning area is generally excellent with measured background concentrations of all criteria pollutants well below the established standards. Criteria pollutant concentrations are measured by the State of Wyoming, Department of Environmental Quality. The BLM, in cooperation with the State of Wyoming and the U.S. Fish and Wildlife Service, however, has established a fine particle measuring site at the Seedskaadee National Wildlife Refuge. Figure 5 shows the observations which have been made at this site since it was established in August 1989. The average particulate concentration is 9.6 micrograms/cubic meter and the maximum is 45 micrograms/cubic meter, which are well below ambient air quality standards. Other air quality related values such as visibility and acid deposition are monitored by the BLM.

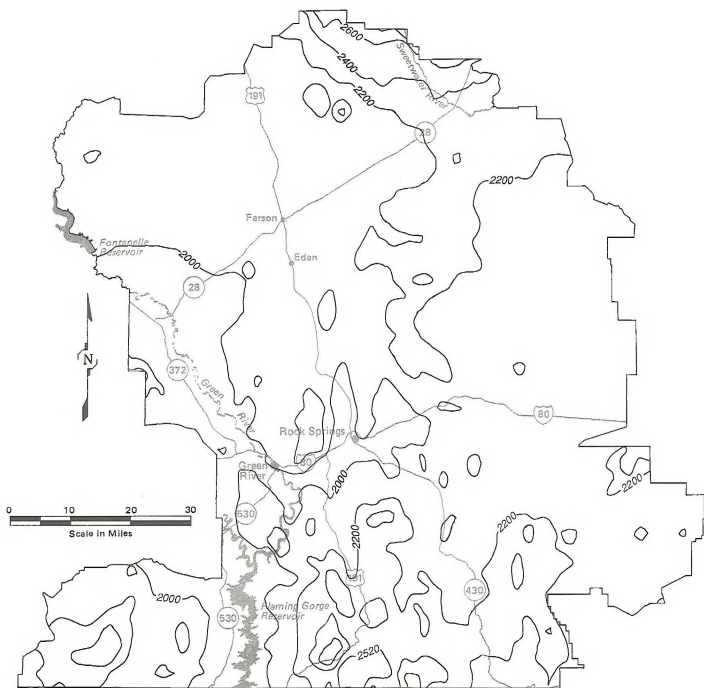
Visibility is measured at Chicken Springs (near the Sand Dunes Wilderness Study Area) using photodensitometry. As can be seen from Figure 6, visibility in this area is generally greater than 70 miles. Fine particles are considered to be the main source of visibility degradation. Considering the low particulate concentrations measured in this area, the very good visibility is not surprising.

Map 56  
**Climatological Stations in  
 Southwestern Wyoming**  
 Green River Planning Area





**Figure 3**  
**Temperature and Precipitation**  
**at Green River, Wyoming**

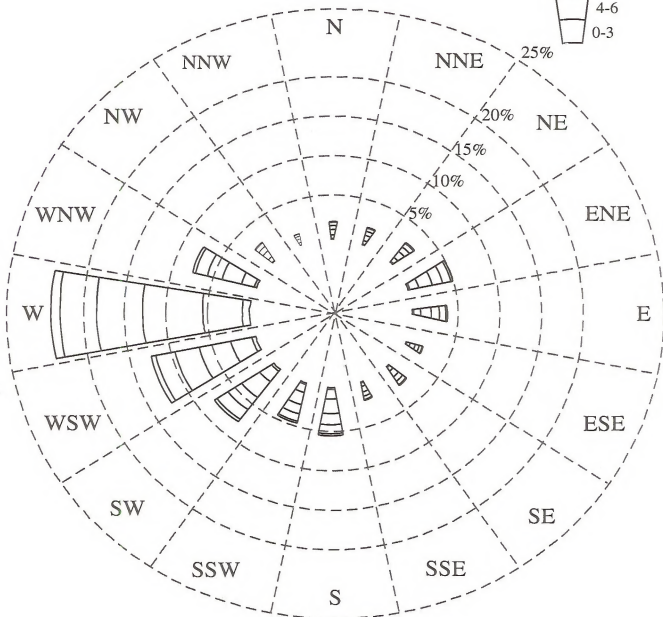
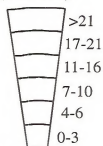


Contour Interval 200 Meters

**Map 57**  
**Elevation Contours**  
**Green River Planning Area**

**Site: Rock Springs**  
 Total OBS - 26097  
 % Calms - 11.9

**Wind Speed Class  
 (Knots)**



**Figure 4**  
**Annual Wind Rose for Rock Springs, Wyoming**

# PM10 Monitoring Station Seedsdakee National Wildlife Refuge

Aug. 20, 1989 to Nov. 12, 1991, 6 Day Intervals

(PM10 = Particulate Matter less than 10 $\mu$ m in diameter)

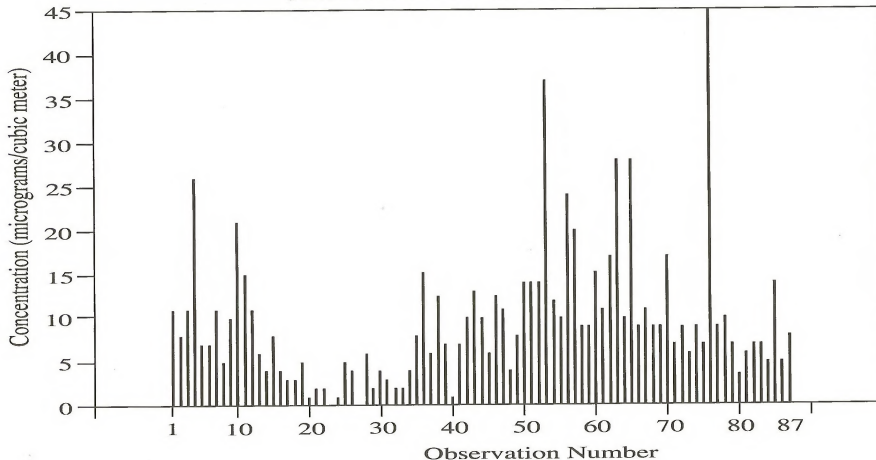


Figure 5  
Results of PM 10 Monitoring  
at Seedsdakee National Wildlife Refuge



Site: GRRI - A

GREEN RIVER RESOURCE AREA

%	SVR	Win	Spr	Sum	Fal
10		0	0	113	169
50		0	0	202	219
90		0	0	311	304

1989 Seasonal Percent Average Standard Visual Range

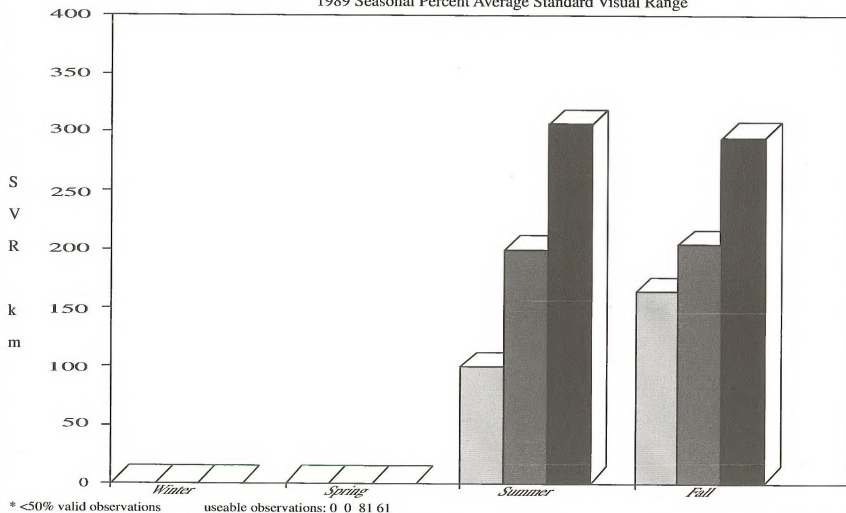


Figure 6

Seasonal Visibility at the Chicken Springs Site, Wyoming

## AFFECTED ENVIRONMENT

At these low levels of particulates, a given change in particulate amount (say 10 micrograms/cubic meter) will cause a larger percentage change in visibility than the same change would cause if the original concentration were much higher.

Acid deposition is measured near Green River. This site is part of the National Acid Deposition Program/ National Trends Network. Figure 7 shows seasonal sulfate and nitrate deposition at this site. Deposition rates of 10 kilogram/hectare/year for sulfate and 15 kg/ha/yr for nitrate are considered potentially damaging to vegetation. Two new acid deposition sites in the planning area have recently been established, one at Green River Lakes, north of Pinedale and the other near South Pass City, but data from these is not yet available.

The criteria pollutants, the applicable National and Wyoming Ambient Air Quality Standards, and the background concentrations are given in Table 3-1. In addition to the ambient air quality standards, major new sources or modifications must comply with the *New Source Performance Standards* and Prevention of Significant Deterioration (PSD) regulations. The New Source Performance Standards are emission standards based on the type of plant to be built, and thus not amenable to consideration in the planning process (when one is not sure what type of development might occur). The PSD regulations, on the other hand, are ambient standards. Unlike the National Ambient Air Quality Standards which are absolute values not to be exceeded more than once per year, the PSD standards are increments or increases above existing background conditions, no matter how low this background is. This serves to keep areas which have very good air quality from being degraded all the way to the National Standard. The PSD increments are also not the same for all areas of the country. Each location is designated either PSD Class I, II, or III. The PSD increments are given in Table 3-2. Class I areas (Yellowstone National Park, Grand Teton National Park, Teton Wilderness Area, Washakie Wilderness Area, North Absaroka Wilderness Area, Bridger Wilderness Area, Fitzpatrick Wilderness Area, and Savage Run Wilderness Area (a State Class I area)) have the smallest increments and were originally designated in the 1977 amendments to the Clean Air Act as National Parks and Wilderness Areas larger than 5,000 acres and any other areas so designated by the States or Indian Tribes at a later date. All the rest of the United States was designated as Class II. Class III requires a redesignation from Class II and has the highest increments. Currently, all BLM-administered lands are designated Class II, and so must meet those increments. However, there are Class I areas near BLM-administered lands in southwest Wyoming which might affect developments.

While the BLM does not have any PSD Class I areas in the planning area, other areas are of concern in terms of air quality impacts. The most important of these are wilderness areas, wilderness study areas, and non-attainment areas. Wilderness areas and wilderness study areas are important in terms of air resource management because the Wilderness Act of 1964 indicates that these areas are to be maintained in their natural, presumably pristine state. Federal land managers have an affirmative duty to protect these areas from sources which might deteriorate their air quality, since this is frequently cited as a factor in wilderness character. Map 3 indicates the locations of BLM wilderness areas and wilderness study areas in the planning area. Non-attainment areas are areas where the National Standards are already being exceeded. No development can occur in or near these areas which will contribute to an increase in the exceeding of pollution levels in the area without an offsetting decrease in another plant which contributes to the non-attainment. In the planning area, the only non-attainment areas have been due to the annual Total Suspended Particulate standard being exceeded. These areas are shown in Map 58. This is no longer being enforced and the status of these areas as non-attainment is uncertain. The State is in the process of making measurements to determine if the particulate standards are being exceeded. Until the determination is made, the areas will continue to be treated as non-attainment. The BLM, U.S. Fish and Wildlife Service, and State are also cooperating in monitoring particulates at a site in the Seedskaadee National Wildlife Refuge. This site is of importance not primarily for the possibility of exceeding ambient air quality standards, but to assess potential reduction in visibility which federal land managers such as the BLM must address under the PSD regulations as an air quality related value.

The most important non-criteria pollutant of concern in the planning area is hydrogen sulfide. Natural gas contaminated with this poisonous gas can cause a significant safety risk if it is released during an emergency event (e.g., well blowout or pipeline rupture). Wells containing hydrogen sulfide are shown on Map 59.

## CANDIDATE PLANT SPECIES

Complete floristic inventories have not been conducted on a large scale in the Bureau; information available on each species varies as do potential threats and opportunities for management and protection. Site specific and general inventories have been conducted for some species; however, areas inventoried but having no candidate plants were not mapped and/or the information was never placed in reports that could be

Site: WY06, Pinedale

Pearson Correlation Coefficient 0.8926

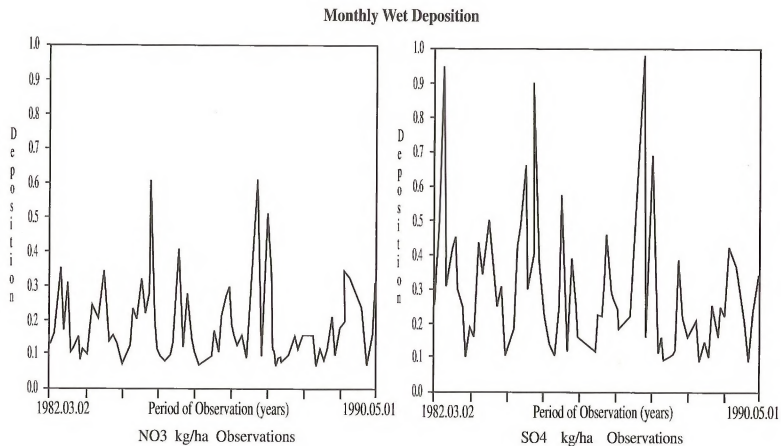


Figure 7

**Sulfate and Nitrate Deposition at Green River, Wyoming.**

# AFFECTED ENVIRONMENT

TABLE 3-1

## CRITERIA AIR POLLUTANT STANDARDS AND BACKGROUND CONCENTRATIONS FOR THE GREEN RIVER RESOURCE AREA, WYOMING

Pollutant	Averaging Period	Wyoming Standard ( $\mu\text{g}/\text{m}^3$ ) <sup>1</sup>	National Standard ( $\mu\text{g}/\text{m}^3$ ) <sup>1</sup>	Background Concentration ( $\mu\text{g}/\text{m}^3$ ) <sup>1</sup>
TSP	24-hour	150	—	62.5
PM-10	24-hour	150	150	9.6
	Annual	50	50	—
NO <sub>2</sub>	Annual	100	100	2
O <sub>3</sub>	1-hour	160	235	—
SO <sub>2</sub>	3-hour	1,300	—	—
	24-hour	260	365	9
	Annual	60	80	1
CO	1-hour <sup>2</sup>	40,000	40,000	3,500
	8-hour <sup>2</sup>	10,000	10,000	1,500
H <sub>2</sub> S	0.5-hour <sup>3</sup>	70	—	—
	0.5-hour <sup>4</sup>	40	—	—

<sup>1</sup> Mg/M<sup>3</sup> - Micrograms per cubic meter.

<sup>2</sup> Not to be exceeded more than once per year.

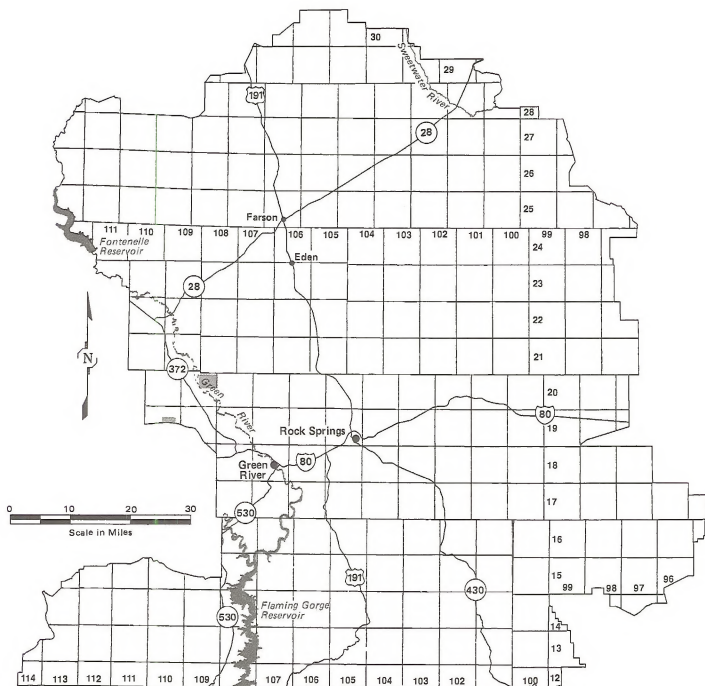
<sup>3</sup> Not to be exceeded more than twice per year.

<sup>4</sup> Not to be exceeded more than twice in any 5 consecutive days.

TABLE 3-2

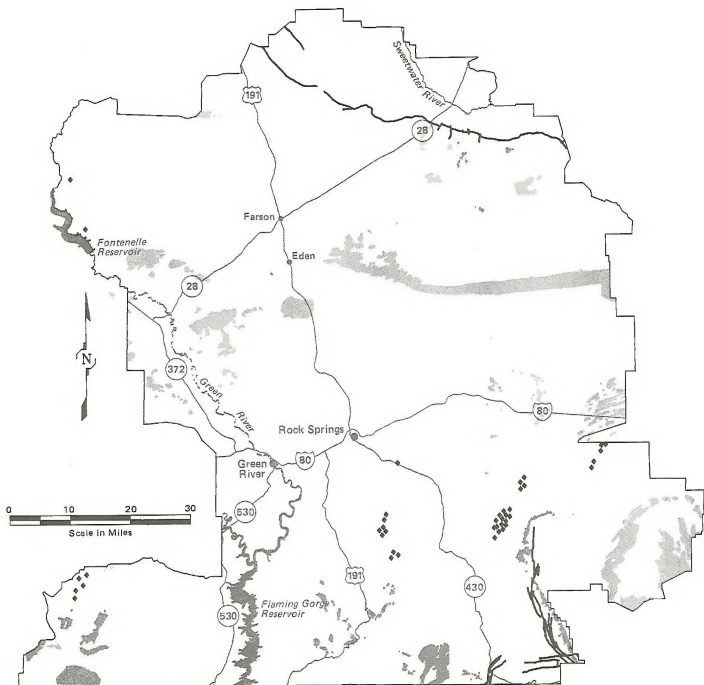
## AIR POLLUTION INCREMENTS FOR PREVENTION OF SIGNIFICANT DETERIORATION

Pollutant	Averaging Period	Class I	Class II	Class III
TSP	Annual Geometric	5	19	37
	24-hour	10	37	75
SO <sub>2</sub>	Annual Arithmetic	2	20	40
	24-hour	5	91	182
	3-hour	25	512	700
NO <sub>2</sub>	Annual Arithmetic	2.5	25	50



 Annual Total Suspended Particulates  
 Non-Attainment Area

Map 58  
 Annual TSP  
 Non-Attainment Area  
 Green River Planning Area



Map 59  
**Geologic Hazards**  
 Green River Planning Area



TABLE 3-3

## CANDIDATE PLANT ACREAGE - ACTUAL AND POTENTIAL HABITAT

		ARPU <sup>1</sup>	ASPR <sup>1</sup>	DETO <sup>1</sup>	THPU <sup>1</sup>	ANAR <sup>2</sup>	ARWI	LEMA	PEAC
Federal Surface/Federal Minerals	Actual Habitat	10	220	0	200	55	15	2,650	10
	Potential Habitat	635	4,870	1,280	23,770		330	4,970	630
Federal Surface/State Minerals	Actual Habitat	0	0	0	0	0	0	0	0
	Potential Habitat	0	0	0	0		0	0	0
Federal Surface/Private Minerals	Actual Habitat	0	0	0	0	0	0	0	0
	Potential Habitat	0	0	0	0		0	0	0
State Surface/Federal Minerals	Actual Habitat	0	0	0	0	0	0	0	0
	Potential Habitat	0	0	0	0		0	0	0
State Surface/State Minerals	Actual Habitat	0	15	0	15	0	0	300	0
	Potential Habitat	0	610	0	1,270		0	630	0
State Surface/Private Minerals	Actual Habitat	0	0	0	0	0	0	0	0
	Potential Habitat	0	0	0	0		0	0	0
Private Surface/Federal Minerals	Actual Habitat	0	5	0	5	0	0	0	0
	Potential Habitat	0	1,120	0	2,570		90	0	0
Private Surface/Private Minerals	Actual Habitat	0	0	5	0	5	0	0	0
	Potential Habitat	0	830	1,280	310		160	40	0
Total Federal Surface	Actual Habitat	10	220	0	200	55	15	2,650	10
	Potential Habitat	635	4,870	1,280	23,770		330	4,970	630
Total State Surface	Actual Habitat	0	15	0	15	0	0	300	0
	Potential Habitat	0	610	0	1,270		0	630	0
Total Private Surface	Actual Habitat	0	5	5	5	5	0	0	0
	Potential Habitat	0	1,950	1,280	2,880		250	40	0
TOTAL ACRES	Actual Habitat	10	245	5	220	60	15	2,950	10
	Potential Habitat	635	7,430	2,560	27,920		580	5,640	630

ABBREVIATIONS: ARPU = *Arabis pusilla*; ASPR = *Astragalus proimanthus*; DETO = *Descurainia torulosa*; THPU = *Thelesperma pubescens*; ANAR = *Antennaria arcuata*; ARWI = *Arabis williamsii*; LEMA = *Lesquerella macrocarpa*; PEAC = *Penstemon acaulis*

<sup>1</sup> Recommended for ACEC.

<sup>2</sup> No potential habitat defined.

## AFFECTED ENVIRONMENT

referenced. Permanent transects and baseline information have been gathered for others. Complete information is lacking for most of the species (Table 3-3).

The Bureau of Land Management is required by law to protect and manage for threatened, endangered, and candidate species identified by the U.S. Fish and Wildlife Service (USFWS). BLM is also required to protect and manage for candidate species jointly identified and agreed to with the appropriate state agency. The State of Wyoming does not have an official list of rare, threatened, or endangered plant species. No plants known to occur in Wyoming have been listed as threatened or endangered under the Federal Endangered Species Act. However, several species occurring within Wyoming have been or are being considered under formal

listing procedures. State and federal agencies have historically given these species special consideration until their status is accurately assessed.

The planning area has nine known candidate plant species within its boundaries (Map 4). Five are currently classified by the USFWS as Category 2 under review for listing as endangered or threatened. Three are classified as Category 3c; however, one species, *Astragalus proimanthus*, precocious milkvetch, is currently being upgraded to Category 2, (Table 3-4) due to its extremely limited distribution and potential threats to the population (see Glossary for definitions).

The information on the nine individual species is a summary of information from a report by the Nature

**TABLE 3-4**

### CANDIDATE PLANT SPECIES IN THE GREEN RIVER RESOURCE AREA

Plant Name		Classification	
Scientific	Common	Federal	Conservancy <sup>1</sup>
<i>Antennaria arcuata</i>	meadow pussytoes	2	G2S2
<i>Arabis pusilla</i>	small rockcress	2	G1S1
<i>Arabis williamsii</i>	William's rockcress	2	G3S3
<i>Astragalus proimanthus</i>	precocious milkvetch	2	G1S1
<i>Descurainia torulosa</i>	mountain tansymustard	1	G1S1
<i>Lesquerella macrocarpa</i>	large fruited bladderpod	3C	G2S2
<i>Penstemon acaulis</i>	stemless beardtongue	3C	G2S1
<i>Thelesperma pubescens</i>	Uinta greenthread	2	G1S1
<i>Thelesperma caespitosum</i>		none	G1S1

<sup>1</sup> Global ranking

- G1-extremely vulnerable to extinction globally
- G2-very vulnerable to extinction globally
- G3-vulnerable to extinction globally
- G4-apparently secure globally
- G5-secure globally

<sup>1</sup> Statewide ranking

- S1-extremely vulnerable to extirpation statewide
- S2-very vulnerable to extirpation statewide
- S3-vulnerable to extirpation statewide
- S4-apparently secure statewide
- S5-secure statewide

The Nature Conservancy, Natural Diversity Data Base ranking system for plant sensitivity is on a global and a statewide basis. Sensitivity is determined by the vulnerability of the species to extinction globally or extirpation statewide, based on threats to the population.

Source: The Nature Conservancy 1990. Natural Diversity Data Base Ranking System.

## AFFECTED ENVIRONMENT

Conservancy, Wyoming Natural Diversity Database (Marriott 1988).

### *Antennaria arcuata*

*Antennaria arcuata*, meadow pussytoes, is a Category 2 candidate under review for Federal listing as either threatened or endangered. The Nature Conservancy ranks this plant as very vulnerable to extinction globally and very vulnerable to extirpation statewide, due to its restricted range (Table 3-4).

*Antennaria arcuata* has been found in Idaho (one site) and Nevada (two sites). Twenty sites are known for Wyoming, all in Fremont County see Map 4. Most are located east and southeast of Atlantic City. Two occurrences are located in the Granite Mountains northwest of Jeffrey City, and two are found southwest of South Pass City.

The populations southwest of South Pass City are on land managed by the BLM. One site is on Fish Creek north of Wyoming Highway 28 (part of this occurrence is privately-owned). These populations are small compared to those near Atlantic City and in the Granite Mountains. A population along Long Slough south-southeast of Atlantic City may extend onto the planning area.

Meadow pussytoes are found typically in wet meadows surrounded by sagebrush grassland. The plants occur on the drier margins of the meadows. Often, the meadows are "hummock" meadows, with hummocks to several feet in height. In these situations, *Antennaria arcuata* is most common on the bare sides of drier hummocks near the margins of the wetlands. On more level sites with bare soil, the plants occasionally form vegetative mats.

Potential habitat in the area of Atlantic City and South Pass City has been adequately inventoried, and additional survey is not a high priority need.

Populations of *Antennaria arcuata* range in size from several hundred to several thousand plants. The occurrences on the planning area are relatively small. In the absence of population trend data, it is not known whether the species is increasing, declining, or remaining stable.

Most of the known populations occur on sites that are heavily grazed, as livestock concentrate around the wetlands where meadow pussytoes grows. The effects of grazing are not understood. Data collected in two enclosures established by the Lander Resource Area in 1983 and 1984 show decreasing populations trends for

*Antennaria arcuata* within the enclosures. It has been suggested, however, that the sites chosen for the enclosures were not representative of meadow pussytoes populations, i.e., that too few individuals were present. Some grazing may enhance meadow pussytoes habitat by decreasing competition from other plants. Loss of wetlands and the creation of hummocks in wet meadows are caused by overgrazing and trampling by livestock. However, excessive trampling and compaction may cause eventual loss of habitat. Browsing of the species itself has been observed at a few closely-cropped sites.

Livestock water developments and salt stations in areas of *Antennaria arcuata* populations would destroy the plant's habitat. No populations have been documented around stockpounds or along well-channelled streams; apparently, shallow surface (and perhaps subsurface) water associated with seeps and wet meadows is a habitat requirement.

*Antennaria arcuata* is considered a candidate plant species due to its very restricted overall range. A status report prepared for the USFWS by The Nature Conservancy in 1986 recommended that the species retain its Category 2 status in the absence of population trend data, and lack of information on threats. The Category 2 status affords the species some protection without resorting to listing.

No additional inventory is recommended in the planning area at this time. Regular monitoring (every two years initially) is recommended. Because populations in the planning area are small, simple mapping of populations with censuses of flower stem production would be a satisfactory monitoring method.

### *Arabis pusilla*

*Arabis pusilla*, small rockcress, is a Category 2 candidate under review for Federal listing as either threatened or endangered. As of August 1991, the USFWS prepared a proposal to list the species as Threatened and Endangered. The Nature Conservancy ranks this plant as extremely vulnerable to extinction globally and extremely vulnerable to extirpation statewide (Table 3-4).

*Arabis pusilla* is known from only one documented location: near Pine Creek, north of Wyoming Highway 28 in the southern Wind River Range, Fremont County, Wyoming. This single known occurrence is on land managed by the BLM, within the Pine Creek Special Management enclosure, and a recreation special management area (SMA).

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Small rockcress is found in crevices and on sparsely vegetated, very coarse soil in granite-pegmatite outcrops surrounded by sagebrush grassland. Most granite-pegmatite outcrops in the South Pass area were surveyed in 1986. Similar outcrops along the Lander Cutoff were spot-checked. Unsurveyed potential habitat exists along the Sweetwater River in the canyon southeast of Atlantic City.

In 1986, less than 100 plants were counted at the documented location. However, the site visit may have been too late for accurate population estimates; many plants seen were in late fruit (seeds dispersed). In 1988, over 600 plants were counted within the sampled area. The entire population was probably close to 1,000 plants. The population occurs in outcrops within 2 to 3 acres. No threats are known at this time. However, the extremely restricted range makes this species highly vulnerable to extinction.

Potential habitat in the canyon of the Sweetwater River (granite-pegmatite outcrops) needs to be surveyed. A monitoring program for *Arabis pusilla* was established in 1988, and regular monitoring (every two years initially) of *Arabis pusilla* is recommended. The studies may provide additional information on taxonomic relationships, as well as alert managers to unforeseen threats to this very rare species. The management prescription for the Pine Creek SMA should be modified to include protective management for small rockcress.

### *Arabis williamsii*

*Arabis williamsii*, William's rockcress, is a Category 2 candidate under review for Federal listing as threatened or endangered. The Nature Conservancy ranks this plant as vulnerable to extinction globally and vulnerable to extirpation statewide (Table 3-4).

William's rockcress is endemic to Wyoming, and occurs on 26 sites. Sites occur in the southeast Absaroka Mountains, the north and south ends of the Wind River Range, and the east flank of the Wyoming Range west of Big Piney. *Arabis williamsii* occurs in the planning area on public land just north of Wyoming Highway 28 in the vicinity of Willow and West Willow Creeks.

Habitat consists of coarse gravelly to rocky soil; often on relatively bare soil including rodent mounds, near rocks and other somewhat disturbed sites (e.g., near snow fences or on old overgrown dirt roads); usually associated with sagebrush grassland.

Some unsurveyed potential habitat remains in the southern Wind River Range, but the area as a whole has

been well surveyed. Additional populations may be discovered along the east flank of the Wyoming Range and the west flank of the Wind River Range on the Pinedale Resource Area.

Most populations surveyed in 1986 and 1988 had several hundred individuals and may include more. Population boundaries were not determined due to limited time; surveys so far have concentrated on documenting the distribution on the species.

Surveys by the Nature Conservancy in 1986 and 1988 indicated that *Arabis williamsii* should no longer be considered candidate, based on distribution, abundance, and lack of threats. The Nature Conservancy will recommend downlisting of the species to Category 3C.

Additional information is needed to determine the validity of the species, and its relationship to the other members of the genus with which it occurs. Such information has scientific value in studies of plant speciation, evolution, and endemism. Continuation of the monitoring program established in 1988 is recommended for this reason, and because it can be done with relatively little time and expense.

### *Astragalus proimanthus*

*Astragalus proimanthus*, precocious milkvetch, is a Category 2 candidate under review for Federal listing as threatened or endangered. The Nature Conservancy ranks this plant as extremely vulnerable to extinction globally and extremely vulnerable to extirpation statewide (Table 3-4).

*Astragalus proimanthus* is only known to occur in extreme southwestern Sweetwater County, Wyoming, in the vicinity of McKinnon. It is known from six sites, all within one township and one section from the adjacent township. Most of the known habitat for precocious milkvetch is on land managed by the BLM.

*Astragalus proimanthus* is found in cushion plant communities in the *Artemisia tridentata*-*Agropyron spicatum* habitat type (sagebrush grassland) on rocky clay (possibly calcareous) soils.

*Astragalus proimanthus* was surveyed under BLM contract in 1981. The report states that 69 potential sites were surveyed (5,425 acres), but no map is included to show what areas were covered. It is suggested that no additional potential habitat exists. It is not clear whether additional survey will yield new populations of the precocious milkvetch. Attempts to correlate soils with potential plant sites have been unsuccessful. Sites surveyed

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in 1983 ranged in size from 30 to 70 acres, with from 1,500 to 9,000 plants (estimated).

"Roads and dumps" were listed as minor threats to *Astragalus proimanthus*. Several vehicle trails and two dumps are located in or near populations. No data are available on population trends; qualitative observations over the last seven years suggest that the populations are maintaining themselves.

The extremely limited range of this species qualifies it for candidate status, even in the absence of immediate threats. A regular monitoring program is needed to alert managers to problems should they arise. A reconnaissance of known sites and unsurveyed potential habitat in the area is recommended in the absence of such information in previous survey reports and additional survey for the species may be required.

If reconnaissance (and additional survey) indicate that the global distribution of the precocious milkvetch is indeed very restricted, it is recommended that several sites with milkvetch populations be designated Areas of Critical Environmental Concern (ACECs). Management of the ACECs should be directed at protection of this species and essential habitat.

### *Descurainia torulosa*

*Descurainia torulosa*, a tansymustard, is a Category 1 candidate under review for Federal listing as threatened or endangered. The Nature Conservancy ranks this plant as extremely vulnerable to extinction globally and extremely vulnerable to extirpation statewide (Table 3-4).

Category 1 status for *Descurainia torulosa* is inappropriate, because insufficient information is available to make a decision on listing. BLM sensitive status for the Wyoming tansymustard should be maintained by the Rock Springs District.

Prior to 1991, the tansymustard was known to occur at 7 locations, all in Wyoming. Six of these occur in the Absaroka Mountains of northwest Wyoming, on land managed by Bridger-Teton and Shoshone National Forests (Marriott 1991). The seventh is widely disjunct from the main range of the species, and is located in Sweetwater County, Wyoming, southeast of Rock Springs at the base of northerly-facing cliffs on sparsely-vegetated sandy soil. *Descurainia torulosa* has been found at elevations ranging from 8,300 to 10,000 feet above level. In Sweetwater County, habitat ranges from 8,300 to 8,500 feet above sea level.

In 1991, the Rock Springs District of the BLM contracted on a cost-share basis with the Wyoming Natural Diversity Database of the Nature Conservancy to carry out field surveys of the Wyoming tansymustard in Sweetwater County.

The Wyoming tansymustard appears to be very vulnerable to extinction. In Sweetwater County, existing human-caused threats to *Descurainia torulosa* were identified only at Pine Butte. Potential threats identified are (major) expansion of the telecommunications facility at the southwest end of Quaking Aspen Mountain, and increased use of the area for recreation.

### *Lesquerella macrocarpa*

*Lesquerella macrocarpa*, large-fruited bladderpod, is a Category 3C candidate under review for Federal listing as threatened or endangered. The Nature Conservancy ranks this plant as very vulnerable to extinction globally and very vulnerable to extirpation statewide (Table 3-4). It is endemic to the northern Great Divide Basin in Sweetwater and Fremont Counties, Wyoming and occurs in 7 or 10 sites. Most of the known large-fruited bladderpod populations occur on land managed by the BLM (Bush Rim northeast of Steamboat Mountain and Continental Peak - Oregon Butte). The species has been collected from sparsely-vegetated clay flats, benches, slopes, and hills; it commonly grows with *Atriplex gardneri* (Gardner's saltbush). Its elevational range is 7,200 to 7,700 feet.

In 1981, *Lesquerella macrocarpa* was surveyed under contract with the BLM. Forty-eight potential sites were surveyed for populations. No survey route maps were included, and it is not clear whether or not additional potential habitat remains to be surveyed. Sites surveyed ranged in size from 80 to over 1,000 acres, with several hundred to tens of thousands of plants (estimated).

Trampling by wild horses and off-road vehicles have been mentioned as threats to *Lesquerella macrocarpa* populations. Additional survey showed that these threats may be minimal. The species was found thriving along a disturbed roadside. While off-road vehicles can destroy populations, their disturbance may open additional habitat which could be colonized if a seed-source remains nearby. There is no evidence, however, that disturbance is required for habitat maintenance.

Large-fruited bladderpod population sizes fluctuate from year to year in response to moisture availability. During dry years, when populations are small, the species is much more vulnerable to adverse impacts.



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Due to its very limited overall range and small population sizes in dry years, *Lesquerella macrocarpa* should be considered a candidate species. No threats are known at this time. A monitoring program was established in 1988.

Data collected since 1988 probably will not serve as a baseline because of the effect of drought conditions on population size. Baseline data should be recollected during a year of normal precipitation and the species should be monitored periodically to track population trends and to alert managers to unforeseen adverse impacts.

A reconnaissance of known sites and unsurveyed potential habitat in the area is recommended. No survey information was documented in previous survey reports. Additional survey of the species to document distribution, abundance, and potential threats is recommended.

### *Penstemon acaulis*

*Penstemon acaulis*, stemless beardtongue, is a Category 3C candidate under review for Federal listing as threatened or endangered. The Nature Conservancy ranks this plant as very vulnerable to extinction globally and extremely vulnerable to extirpation statewide (Table 3-4).

*Penstemon acaulis* is endemic to southwest Wyoming (Sweetwater County), northeast Utah (Daggett County) and northwest Colorado (Moffat County). Two varieties are recognized: var. *acaulis* is found in all three states, while var. *yampaensis*, with broader leaves, occurs in the eastern portion of the species range in Colorado and Utah. The stemless beardtongue occurs on 5 sites in Wyoming, all in extreme southwest Sweetwater County near McKinnon on land managed by the BLM.

Habitat consists of semi-barren substrates in pinyon-juniper and sagebrush-grassland communities. In Wyoming, stemless beardtongue occurs on rocky sparsely-vegetated sites with sagebrush and cushion plants. Elevation range is 5,900 to 7,200 feet.

No records are available concerning potential habitat and areas surveyed in the past. Similar habitat (coarse outwash) occurs at other sites in the area.

*Penstemon acaulis* is said to be infrequent to common where it occurs. No quantitative data on population size are available. One population occurs near the edge of a gravel quarry. Expansion of this quarry could threaten the population. No data are available concerning population trends for *Penstemon acaulis*.

Stemless beardtongue is restricted in overall range, and appears to be rare in Wyoming. It is not clear whether or not the species should be considered candidate. Thorough survey is needed. If the species is sufficiently rare, restricted, and/or threatened, monitoring programs should be established.

### *Thelesperma caespitosum*

*Thelesperma caespitosum* is a recently discovered plant that has no known common name. This plant has not been ranked by the USFWS. The Nature Conservancy has ranked this plant as extremely vulnerable to extinction globally and extirpation statewide (Hollis Marriott, personal communication 1991).

*Thelesperma caespitosum* is currently known to occur in northeastern Utah and southwestern Wyoming. This plant was discovered growing along a barren white shale ridge. No additional information is currently available.

### *Thelesperma pubescens*

*Thelesperma pubescens*, Uinta greenthread, is a Category 2 candidate under review for Federal listing as threatened or endangered. The Nature Conservancy ranks this plant as extremely vulnerable to extinction globally and extremely vulnerable to extirpation statewide (Table 3-4).

*Thelesperma pubescens* is restricted to less than 100 square miles in southwesternmost Sweetwater and southeasternmost Uinta Counties, Wyoming. It occurs on four relic surfaces off the north flank of the Uinta Mountains: Cedar and Sage Creek Mountains and the two summits of Hickey Mountain. All of the known sites for the Uinta greenthread occur on land managed by the BLM.

The Uinta greenthread grows along the edges of benches capped with the Bishop conglomerate that stand as isolated plateaus or "mountains." Typically, the broad summits are vegetated with sagebrush grassland, but near the edges, the vegetation becomes sparse and the soil is very coarse with little fine material. In these situations, *Thelesperma pubescens* is often a co-dominant in a community of caespitose, matted, and cushion plants. At the south end of Hickey Mountain, the greenthread is abundant on ridges and slopes where the Bishop conglomerate is very coarse, with fist-size and larger cobbles.

All sizeable outcrops of Bishop conglomerate in the area of known populations have been surveyed for



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*Thelesperma pubescens*. Populations range in size from thousands to tens of thousands of individuals.

Although often abundant where it occurs, the Uinta greenthread is very restricted in its overall range. Disturbance could significantly impact the species. Oil and gas exploration and production is taking place in the Hickey Mountain-Table Mountain area, which includes populations of *Thelesperma pubescens*. The species occupies narrow bands of habitat which could be avoided in most cases.

A monitoring program was established in 1988. Continued monitoring (every year initially) is recommended. *Thelesperma pubescens* flower production appeared to be unusually low in 1988, probably due to drought conditions that year. It is recommended that baseline data be recollected in a year of normal precipitation, temperatures, etc.

Because the species is quite restricted and because the area where it occurs has active oil and gas development, it is recommended that several sites with greenthread populations be designated ACECs. The ACECs should be managed for the protection of this species and essential habitat.

## CULTURAL RESOURCES

Cultural resources in the planning area can be divided into three categories: 1) prehistoric sites, 2) historic sites, and 3) historic trails. Prehistoric sites are the most common and range in time from at least 12,000 years Before Present (B.P.), and possibly much older to the advent of EuroAmerican contact in the 17th century. Historic sites are evidence of the earliest EuroAmerican-Native American contact in the Fur Trade era, followed by the emigration period, early settlement and ranching, communication and railroad networks, and early resource extraction including mining and oil production. Historic sites also include sites of particular interest due to the ethnic diversity they represent.

Approximately two-thirds of the cultural resources in the planning area are prehistoric archaeological sites. These properties represent a wide range of human activities. Many of the sites are surface manifestations of hunter-gatherer campsites. Other sites are buried and represent several stratigraphically superimposed remnants from such campsites. The term campsite generally implies that the site has one or more fire hearth features that likely served as the center of human activities over two or more days. Campsites usually also have a patterned scattering of chipped stone artifacts and sometimes have pottery, bone or other materials left

behind by the prehistoric inhabitants. Stone circle, or tipi ring, sites are evidence of a special type of campsite. Stone circle sites are relatively rare in southwestern Wyoming, although common in the eastern part of the state and on the Great Plains, and thus they are especially important cultural resources.

The most common site types in the planning area are limited activity locations including places where plant resources were gathered and/or processed, or animals killed or butchered. These sites usually have specialized kinds of artifacts indicative of the activity that took place there. Still other limited activity sites consist only of a scattering of chipped stone debris from making and repairing stone tools. The specific function of these sites is difficult to ascertain; however, improvements in archaeological methods and theory are making the ubiquitous lithic scatter a more informative cultural resource.

Another rather ubiquitous site type in the Green River Basin is the stone material quarry or source area. Outcrop and lag gravel exposures of excellent quality chert and quartzite rocks served as a source of stone tool materials for ancient people. There are places in the Green River Basin, where lithic procurement sites cover several square miles. The availability of these resources was apparently of tremendous importance to prehistoric people. Lithic procurement sources are important components of the prehistoric record; however, they are so pervasive as to seem less significant than other prehistoric site types.

The planning area also has a few sites of mass big game kills that are of special scientific interest. These sites sometimes have lines of stone piles, known as cairns, that facilitated guiding animals to the associated entrapment/kill site. In some cases, there are specialized ritual sites associated with big game hunting. To completely understand big game hunting traditions, it is necessary to preserve not only the actual kill site but also these ancillary facilities. The rarity of mass kill sites in the planning unit makes them a resource in need of specialized management. There are also other stone cairns and stone alignments that may have had some function other than as a hunting feature. These sites are little understood and should be protected at least until we can better understand their role in the lifeways of prehistoric people.

The planning area also has at least one source of soapstone that could be carved into bowls, pipes, etc., by prehistoric people. This material, known as steatite, was important for both utilitarian and ceremonial purposes.

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### Prehistory

The prehistoric human occupation of southwestern Wyoming can conveniently be divided into three phases, the PaleoIndian Period, the Archaic Period, and the Late Prehistoric Period, each characterized by specific adaptive strategies and technologies. Projectile points characteristic of each of these time periods are illustrated in Figure 8.

### PaleoIndian Period

The PaleoIndian Period covers the time range from about 8,000 years ago to 12,000 years B.P. During this time, people entered the new world apparently by way of an ice-free corridor across the Bering Strait and extending onto the present-day Great Plains of North America. There is mounting evidence that this was not the first migration of people into North America from Asia via the Alaskan and Siberian Peninsulas (Bryan 1986). But following the last of the great ice ages, people apparently entered the new world in sufficient numbers to establish a permanent foothold. It seems probable that several different cultural groups made up this "peopling of the new world" near the end of the Pleistocene.

#### Clovis

The earliest documented cultural manifestation in the new world is known as the Clovis Culture. Clovis sites date from 11,500 years ago to just over 12,000 years ago. Although no intact Clovis components have been discovered in the planning area a number of artifacts have been found on the surface indicating a strong possibility that Clovis sites will be found in the planning area.

No pre-Clovis cultural manifestations are known in the planning area. However, there are numerous sites that have only an assemblage of simple flakes and flake tools scattered across the surface or within a buried component. The possibility exists that one or more of these locations could be a pre-Clovis site where all other evidence has long since decomposed.

In several cases organic features discovered in pipeline trenches in southwestern Wyoming have produced radiocarbon dates in the 18,000 year-old range. However, since no cultural materials have been associated with these features and they are not definitive fire hearths, they remain intriguing phenomena that may eventually prove to represent a pre-Clovis cultural manifestation.

### Goshen

Recently, a potential post-Clovis and pre-Folsom cultural complex, known as Goshen, has been identified at the Hell Gap site in eastern Wyoming, and at the Mill Iron Site in southeastern Montana (Frison 1988). The potential for Goshen culture sites in the planning unit seems to be high although none have been identified to date.

### Folsom

The Folsom cultural tradition is just slightly younger than Clovis but does not seem to have been derived from it. Folsom sites range in age from about 10,000 to 11,000 years B.P. Frison (1978) mentions two Folsom localities in the planning area—the Morgan Site in the Red Desert north of Rock Springs and the Mud Springs site south of Rock Springs. Neither of these sites has been extensively investigated and no radiometric dates exist for them. There have also been a number of Folsom points discovered as surface occurrences in the planning unit. These examples demonstrate the likelihood that other Folsom sites exist in the area.

### Late PaleoIndian Traditions

Evidence of Late PaleoIndian cultural traditions is much more plentiful than evidence from earlier cultures.

The "type site," or original location site, for the Eden projectile point is the Finley Site located in the planning area near Eden, Wyoming. This site was first investigated in the 1940s by scientists from the University of Pennsylvania and discovered to be a kill and butchering site for *Bison antiquus*, an extinct buffalo species known to be about half again larger than modern buffalo.

The Pine Springs Site, investigated by archaeologists from the University of Utah in the 1960s (Sharrock 1966), is another well known late PaleoIndian site in the planning area. Artifacts from the deepest occupation level at Pine Springs may represent a variant of the Agate Basin Late PaleoIndian tradition although they date to about 11,800 years ago which seems to be considerably older than most Agate Basin components. This date was obtained from bone collagen and is considered questionable by Sharrock (1966) who postulates that the component is simply an Agate Basin variant and dates to the same age as other Agate Basin manifestations, i.e., 9,000 to 10,000 years B.P.

The Deadman Wash Site, east of Rock Springs, produced a Scottsbluff PaleoIndian component. Scottsbluff points have characteristic stemmed haft ele-

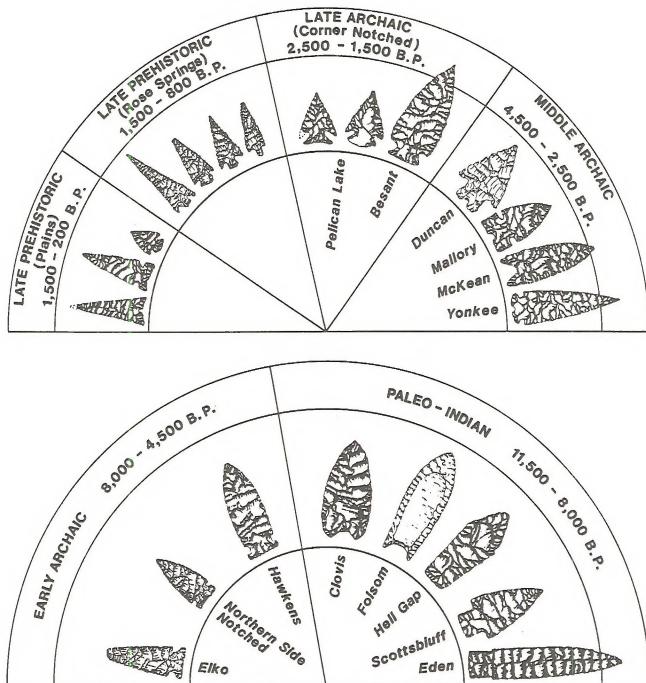


Figure 8  
 Projectile Points from Various Time Periods  
 In Southwestern Wyoming

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ment point and they date to about 8,500 years ago. The Scottsbluff component only occurred within a small portion of the excavation at Deadman Wash. It is not known if more extensive PaleoIndian aged cultural materials exist at Deadman Wash. The Deadman Wash site was excavated within a data recovery mitigation context associated with pipeline construction; therefore, research was restricted to the right-of-way corridor. The potential for additional archeological work to be conducted at the site is very good.

### Archaic Period

The term Archaic implies a broad range of plant and animal food use, as opposed to the focus on big game typical of the PaleoIndian periods. The onset of the Archaic cultural tradition in the intermountain west is thought to generally correspond with the climatic change that represents the break between the Pleistocene and Holocene geological ages.

During the early stages of the Archaic Period, people apparently developed a greater reliance on plant foods. Consequently, plant gathering achieved a status equal to that of hunting as a means of subsistence. Changes in subsistence practices resulted in concomitant changes in the prehistoric tool kit which makes up most of the archaeological record today. The large finely made projectile points of the PaleoIndian were replaced with considerably smaller spear and atlatl dart points which usually had either corner or side notched bases to facilitate hafting into a foreshaft. The quality of workmanship of Early Archaic points is quite variable with some rivaling those of the PaleoIndian in fineness, while others are rather crude.

#### Early Archaic

The Early Archaic cultural period ranges from about 7,500 years B.P. to roughly 4,500 years B.P. Early Archaic occupation of the intermontane basins has been documented by recent research at several sites in southern Wyoming. In the planning area, the Deadman Wash site produced radiometric dates ranging from 6,800 to 5,500 years B.P.

#### Middle Archaic

The lifeways which began during the Early Archaic intensified during the Middle Archaic between 4,500 and 2,500 years ago. Whenever an adaptive process intensifies, it is assumed that the ecosystem was relatively stable. Probably the prehistoric artifact most commonly found in the planning area is one of the several variants of the Middle Archaic atlatl dart point. Furthermore, nearly every stratified archaeological site excavated in

the planning unit has had one or more well-developed Middle Archaic component. This evidence seems to indicate an increased population during this environmentally stable period.

Housepit features were found in Middle Archaic aged deposits at the Maxon Ranch and Sweetwater Creek sites which probably indicates year-round occupation of intermontane basin environments. The housepit features from Sweetwater Creek and Maxon Ranch are each somewhat different, which may indicate local cultural variation, or a change in intensity of occupation over time; or, these differences could be simply a reflection of personal preference in house styles.

During the Middle Archaic it becomes possible to differentiate between cultures that seem associated with the Great Plains and those in the Great Basin. The abundance of Middle Archaic cultural materials and the convergence of plains and basin environments in the planning unit make it an ideal place for the pursuit of a wide variety of research questions about this intensive period of North American prehistory.

#### Late Archaic

The Late Archaic is characterized by the arrival of two distinctive atlatl dart point styles known as Pelican Lake and Besant. While examples of both of these corner-notched dart point types are found in the planning area, these styles are not always easily distinguished from the ubiquitous Elko-point styles assumed to originate in the Great Basin. Here again, the convergence of Plains and Basin cultural manifestations is evident and remains a research question to be further explored.

Although several archaeological components excavated in the planning area have produced radiometric dates within the range of the Late Archaic period (2,500 - 500 years B.P.), none seems to have been a pure cultural component from that period. At the Deadman Wash site for instance, Components 8 and 9 produced Late Archaic dates as well as dates and diagnostic projectile points from both the Middle Archaic and Late Prehistoric components (Armitage, et al. 1982). This situation is likely the result of intermittent occupation of sites over great spans of time. It may also be in part a phenomenon of geological preservation of certain topographic situations that remained unaffected while other locations were destroyed by erosion.

#### Late Prehistoric Period

This Period began about 1,500 years ago and ended when European material culture items began to arrive, by means of diffusion, in the intermountain west at about



1650. The two most important innovations in the Late Prehistoric Period were introduction of the bow and arrow, and pottery into the intermountain west. Atlatl dart technology continued to be used but the bow and arrow expanded the range of hunting techniques available to prehistoric hunter/gatherers at this time. The specific differences and comparative uses of bow and arrow versus atlatl technology are beyond the scope of this overview but are well discussed by Frison (1978:223-224). Suffice it to say that the bow and arrow allowed more effective exploitation of upland regions within the basins and this may have changed the seasonal subsistence round of basin inhabitants.

Roughly a third of the radiometric dates recovered from excavated components in the planning unit fall within this time range.

During the Late Prehistoric Period improved climatic conditions allowed bison herds to increase. Bison could be taken either with atlatl and dart, or with bow and arrow. Buffalo were sometimes trapped in arroyos, or they could be corralled as they were in places on the High Plains proper during this same time period. Thus the Late Prehistoric hunter was expertly equipped to take advantage of this increase of available biomass. It would be wrong, however, to imply that bison were the major food source in the Green River Basin at this time.

Although more bison may have been available and used during the Late Prehistoric than during most of the Archaic Period, antelope were the most substantial food source in the Green River Basin. Since the basin's sagebrush environments were more suited to antelope than to buffalo, antelope became easy prey for prehistoric hunters. Hunters armed with short bows and arrows designed to accommodate smaller arrowpoints could stalk antelope in interdunal areas and could drive them into corral facilities in more open country.

Despite the large numbers of bison and antelope used by aboriginal peoples in the Green River Basin throughout the past 10,000 years, it is probable that more caloric energy was derived from harvest of cottontail rabbits, jack rabbits (hares), and ground squirrels than was ever obtained from large game animals.

Digging sticks used to harvest roots were also undoubtedly used during all prehistoric times although only in a few rare instances in other regions (the Big Horn Basin and Utah's Great Basin cave sites) have digging sticks been found in archeological sites. The open environment of the Green River Basin was generally not conducive to preservation of such perishable items.

## Historic

Roughly a quarter of the known cultural resources in the planning unit are historic sites other than trails. Some of these sites such as Dug Springs, LaCiede, and Big Timber are stations associated with the historic trail network. However, many others are associated with other historic contexts. For instance, there is evidence of the early fur trade era and of the frontier military at several locations in the planning unit. Railroad history is represented by Camp Carmichael and several other railroad construction and maintenance sites. The mining industry is associated with sites including the Gunn Mine and Townsite which is partially on BLM-administered land. Ranching is evident at the Crookston Ranch site which is recommended for special management, and by numerous livestock grazing campsites of a rather ephemeral nature. Early development of fluid minerals is exemplified in South Baxter Basin and in the Clay Basin region.

Management plans exist for the major historic trails in the planning area. The National Park Service, in cooperation with the BLM and state agencies, developed a plan for the Oregon and Mormon Pioneer National Historic Trails. That plan is the basis of BLM management of those nationally significant trails. The California Trail and the Pony Express route are in the same general area as the Oregon Trail and provisions of the Oregon Mormon Pioneer National Historic Trails Management Plan are generally applied to those trails. A cultural resource management plan for the historic Overland Trail was approved in 1986. Management of the Overland Trail is similar to that of the Oregon Mormon Pioneer National Historic Trails since it is of similar historical significance, theme, and era.

The Cherokee Trail, which is in the general vicinity of the Overland Trail (Map 5), has not been systematically studied, and no plan for it has been written. Several other historic trails are known in the planning unit including the Rock Springs to Brown's Park Road, the Point of Rocks to South Pass Freight Road, roads to the South Pass gold fields from Green River and Bryan, and the road from Fort Bridger to the Uintah Agency in Utah.

There are about two dozen rock art sites in the planning unit including five that include several panels and over a hundred individual motifs. These sites are extremely important archeological resources and are also valuable in Native American efforts to revitalize their culture and religion.

There is a strong association between playa lakes, sand dunes, and evidence of prehistoric habitation in

## AFFECTED ENVIRONMENT

southwestern Wyoming. There are three especially prominent examples of this association in the planning area: the Blue Forest Area approximately 24,640 acres; Blue Point Playas approximately 3,200 acres and Adobe Town Rim Playa approximately 1,280 acres (Map 5). The density of archeological sites in these areas increases from the usual 4 to 6 sites per section to something over 20 sites per section. A limited amount of archeological research indicates that dunal areas surrounding playa lakes have been intensively occupied for the past 4,000 years. Scientific understanding of this settlement pattern is an important issue in prehistoric studies. There are indications of archeological components underlying the dunal deposits which maybe Early Archaic or Paleoindian in age which could indicate occupation of this area for at least 8,000 years.

The importance of features such as Boar's Tusk, Sage Creek Mountain, and the North and South Table Mountains area, lies in the association between cultural resources and unusual geographic features which seem to have attracted considerable attention of Native Americans for the past several millennia. This association of peoples and places is important to the understanding and appreciation of past man-land relationships as well as religious beliefs and ritual behavior. Spiritual leaders of the Shoshone Tribe have indicated an interest in these unique geographic landforms.

Development of southwestern Wyoming included several other identifiable ethnic groups. Chinese workers were important in the early coal mining industry. Japanese workers were employed maintaining track along the Union Pacific Railroad. Irish emigrants comprised most of the workforce building the Union Pacific. Cornish miners helped open the coal mines and also worked in stone quarrying operations. Around the turn of the century mining operations began to attract a score of different nationalities including Finlanders, Welsh, Scots, Italians, Greeks, Slovaks, Slovenians, and virtually every other nationality in Europe. Finally, Basque sheepherders have long been instrumental in the livestock industry in the area. This melting pot atmosphere is exemplified today in the cultural diversity of Rock Springs.

## FIRE

The Green River planning area is composed of a combination of basin areas, upland brush (transition zones), and conifer stands. The typical horizontal composition of all fuel models has been one of broken stands of vegetation with generally a natural barrier of water or bare ground breaking fuels of major drainages with the result of infrequent large (2,000+ acres) fires.

Historical fire occurrence between 1980 and 1991 is shown on Table 3-5 and Map 60. An annual average of 33 fires have occurred over the 12-year period. Acres burned have ranged between spot fires of less than one acre to several thousand acres. Fuel continuity usually determines the size.

The majority of fires occur south of Rock Springs along a lightning belt extending from Utah (high Uintas) along the state line. This occurrence pattern may exist because the best opportunity for a sustained ignition is located where lightning can strike standing trees.

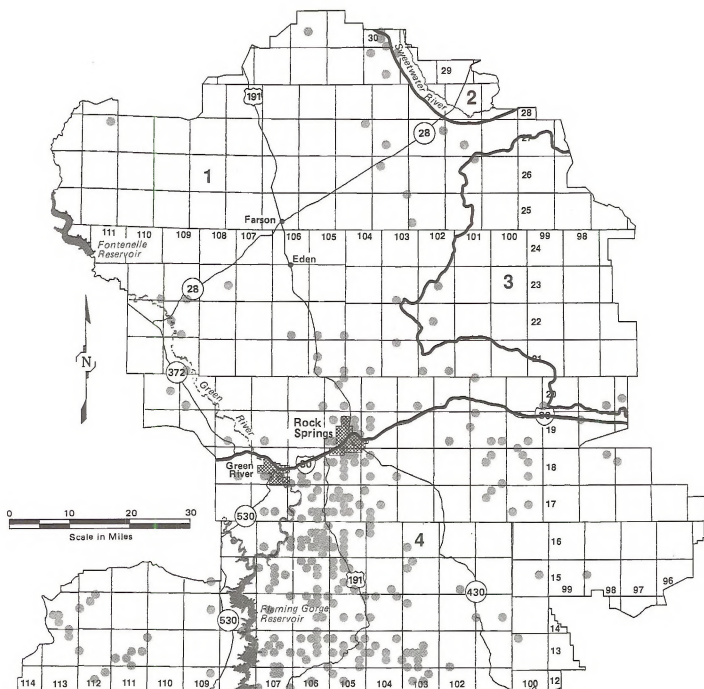
Prior to fire suppression activities and modern civilization, large fires occurred over cyclic periods (depending on fuel system, i.e., sagebrush/grass, juniper/sage, or conifer forest) involving entire drainages. In addition to natural occurrence, 19th and 20th century livestock operations often burned the range lands in the fall of the year. With increased grazing, the abundance of fine fire fuels has been reduced, thus causing a drop in annual fire occurrence. Studies of the transition zones indicate large fire occurrence to be common over the last 300 years. As a result of fire suppression over the last 100 years, brush and tree invasion is common on the edges of the basin area particularly in the sagebrush juniper and aspen/conifer communities.

TABLE 3-5

### FIRE HISTORY (1980 - 1991)

Year	Number of Fires	Acres Burned
1980	33	312
1981	61	594
1982	44	99
1983	18	66
1984	23	4
1985	43	879
1986	20	19
1987	29	1,134
1988	40	1,000
1989	37	102
1990	34	62
1991	15	101
<b>Total</b>	<b>397</b>	<b>4,372</b>
<b>Average/Year</b>	<b>33</b>	<b>364</b>





- Wildfire Occurrence
- 4 Fire Management Area

Map 60  
**Fire Management**  
 Green River Planning Area

Fire effects for the ecological systems involved in the planning area are well documented in literature. A brief summary of each major system involved will classify the local effects.

The sagebrush/grass system when burned has generally set the system back to perennial grass, which after 20 to 30 years is back to its original brush density. The life cycle of this system is generally 30 to 40 years, however, 70 to 100 years is not uncommon.

The juniper/conifer/sagebrush system when burned, generally sets the system back to a perennial grass, which is re-invaded by sagebrush in 10 to 15 years and then is again re-invaded by conifers (lodgepole, white bark, juniper, or limber pines) within 75 to 100 years. This is generally the marginal limit of the pine species and a full stand is not expected - rather a broken mixed stand. The transitional zone between the basin sagebrush and upper conifer forest is typified by this system.

The conifer/mixed conifer system, when burned, is re-invaded by conifer seedlings and perennial grasses within 10 to 15 years. This system generally returns to its original density within 75 to 100 years. Systems such as this often become diseased and bug infested and become fire hazards after more than 150 years.

The overall fire effect for the planning area has been the opening of dense vegetation (brush or tree) and the setting back of systems to a highly productive perennial grass/brush stage. Age classes have been staggered and a mosaic pattern is maintained. Vegetation patterns are typically highly fragmented in age class and distribution. The potential for extensive, large area, intense wildfires is low.

Human activity during the late 19th and 20th centuries has substantially altered fire occurrence and burn patterns. Increased development and recreational activity have resulted in numerous roads which makes access for wildfire suppression and prescribed burn activities easier but it has also led to increased human use and subsequently more fire occurrences. Active fire suppression programs have led to increased fuel loading in the brush and forest communities. This is resulting in larger, more intense fires once an ignition occurs. Human activity has also created hazards for fire suppression personnel. An example would be the unauthorized dump of hazardous and industrial wastes.

## FORESTRY

### General Commercial Forest Type Condition

The Green River planning area contains about 7,900 acres of commercial forest land. There are 357 acres of seed/saps, 3,549 acres of pole timber, and 4,037 acres of sawtimber (Table 3-6). Total estimated standing volume is 13,972,439 cubic feet or 62,875,974 board feet of trees 5 inches diameter breast height or larger (Table 3-7). Sawtimber accounts for 4,037 acres or 51 percent of the total commercial forest land. This timber type is mature to overmature. Many of these stands are decadent and exhibit considerable mortality. Lack of past management actions has resulted in these unhealthy stand conditions. Pole timber accounts for 3,549 acres and many of these stands are as old as the sawtimber stands. However, these trees are smaller in size because of over stocking, and resulting growth stagnation. The 357 acres of seed/saps results from past harvest activities or old burns.

Growth potential for the commercial forest land is based on the capability of growing 20 cubic feet per acre per year. This would be a minimum of 158,860 cubic feet or 714,870 board feet annually. Based on allowable harvest calculations, the Green River planning area has the potential to sustain an annual estimated harvest level of 500,000 to 1,000,000 board feet, depending on the level of forest management activity.

Maintaining forest health and vigor for the commercial forest stands requires following prescribed silvicultural prescriptions for each forest type.

Silvicultural practices in the commercial forest lands would include clearcutting, individual tree marking, shelter wood, thinning, and group selection. Clearcut units would not exceed 25 acres in size unless a site specific analysis indicates resource objectives would be met with a larger cut. All clearcuts would consider other resource values such as escape cover for wildlife. Clearcut unit size and shape would be designed to maximize natural regeneration.

Harvesting fuelwood, i.e., dead trees, by public demand sales is strictly a wood salvage operation. Meeting the public need for this product is certainly important, however, this action does not improve forest health or tree vigor. Larger commercial sales are necessary to perpetuate forest cover by stand replacement.

## AFFECTED ENVIRONMENT

TABLE 3-6

## COMMERCIAL FOREST ACRES BY TIMBER TYPE AND SIZE CLASS

Species	Seed/Saps (<4.9" DBH)	Poletimber (5.0-8.9" DBH)	Sawtimber (9.0+" DBH)	Total
Lodgepole pine	348	3,317	3,207	6,872
Spruce fir	9	232	664	905
Douglas fir	—	—	166	166
<b>Total</b>	<b>357</b>	<b>3,549</b>	<b>4,037</b>	<b>7,943</b>

TABLE 3-7

COMMERCIAL VOLUME BY SPECIES AND SIZE CLASS  
(cubic feet)<sup>1</sup>

Species	Seed/Saps	Poletimber	Sawtimber	Total
Lodgepole pine	194,880	5,124,765	6,513,417	11,833,062
Spruce fir	585	280,256	1,563,720	1,844,561
Douglas fir	—	—	294,816	294,816
<b>Total</b>	<b>195,465</b>	<b>5,405,021</b>	<b>8,371,953</b>	<b>13,972,439</b>

<sup>1</sup> One cubic foot of wood volume is equal to 4.5 board feet.

In addition to the commercial forest land, the planning area has approximately 127,977 woodland/forest land acres. Aspen, limber pine, and juniper are the major forest types comprising the woodland acres. These woodland acres have important wildlife habitat, recreational qualities and soil and water values. These stands also provide minor forest products upon public demand.

Woodland forest areas would receive silvicultural treatment practices that promote the viability of these stands. These treatments may include thinning, harvesting, chaining, and burning. The vegetative material resulting from these treatments would normally be sold as public demand sales.

The major forest resource for the Green River planning area is located in four main areas: the Wind River Front, Little Mountain, Hickey Mountain-Table Mountain area, and Pine Mountain. For purposes of this document, the forest resource will be divided into these compartments (Map 6).

## Historical and Current Use

Earliest uses of the forest in the planning area were Indians collecting tipi poles, firewood, and hunting and fishing for their survival. Settlers in the 1800s needed wood products for buildings, fences, wagon repairs, and firewood. As mining activity increased, so did the demand for mine timbers. The construction of the Transcontinental Railroad in the 1860s created a demand for railroad ties some of which were taken from what is now BLM-administered land. Demand for railroad ties was high between 1920 and 1930 when the Union Pacific Railroad Company was expanding its routes. Tie cutting activity subsided in the early 1930s while the area experienced an increased demand for dimensional lumber.

The planning area has occasionally advertised timber sales for the Wind River Front and Pine and Little Mountains. Sales that have been advertised on Pine and Little Mountains have either resulted in defaulted contracts or no bidders at all. The advertised sales on

## AFFECTED ENVIRONMENT

Pine and Little Mountains are very difficult for timber operators to receive a profitable rate of return due to the long hauling distance. Decreasing availability of timber throughout southwestern Wyoming and northeastern Utah is expected to increase the demand for the forest resource in the planning area.

Pine Mountain, Little Mountain, and the Wind River Front all have firewood, post/pole, and Christmas tree sale areas that are designed to meet the public demand and help achieve forest management objectives for these areas.

The majority of the commercial conifer species are located along the Wind River Front. These stands are primarily found extending from timbered areas on Forest Service land. The planning area stands extend downslope away from the Wind River range reaching the transition zone of sagebrush hills. Moderate-sized stands of commercial conifers are also found on the Pine Mountain compartment and Little Mountain compartment near the Colorado and Utah borders. These two compartments also contain large stands of juniper scattered throughout their lower elevations. The Hickey Mountain-Table Mountain unit is composed primarily of scattered stands of juniper with small pockets of aspen and Douglas-fir intermixed on Hickey Mountain.

Woodlands data was collected through the use of aerial photo interpretation. No field inventories were done on any of these stands. Stands were identified and entered into the GIS-computer system to obtain acreage figures on juniper for the planning area. Woodland inventory data was also correlated with Landsat acreage information.

The conifer stands can be divided into two categories. The first category includes the north-facing, cooler slopes that are mostly occupied by the Engelmann spruce/subalpine fir complex (spruce-fir) with occasional Douglas fir intermixed. This complex is dominated by subalpine fir. The second category includes the south, east, and west facing slopes which are occupied by lodgepole pine and the limber/white bark pine complex, as well as spruce-fir in the transition zone from north to east. Lodgepole is the most prevalent species in this complex.

Aspen stands are found throughout the planning area on a variety of aspects. The most dominant occurrences are on east to north facing slopes. Much of the aspen occurs in variable sized stands adjacent to the downslope edge of the conifer zone. Aspen stands may be intermixed with both categories of conifer or totally isolated.

Two additional species, narrow leaf cottonwood and Rocky Mountain juniper are also found in the planning area. Small amounts of cottonwood are found growing in riparian zones adjacent to streams and rivers. Juniper stands are found predominantly south of I-80 in fairly continuous, moderately stocked stands scattered throughout the transition zone between the valley bottoms and the mountains.

Insects and diseases are present in most of the timber stands in the planning area. Dwarf mistletoe and the mountain pine beetle are the most common disease and insect affecting the commercial timber stand. They are currently at endemic or static levels. However, due to the age and general condition of many of the sawtimber stands, insect levels could rapidly change from endemic to epidemic proportions especially during prolonged drought conditions.

The 7,943 acres of commercial forest land in the Green River planning area are included in the allowable harvest calculations for the Rock Springs District. Calculations were made in 1964, 1975, and 1985. The commercial forest land base in each calculation was considered as lands available for restricted management of forest products. Calculations were made under the principles of multiple use and sustained yield.

Based on the 1985 calculations, the Green River planning area could annually harvest from 104,000 cubic feet to 225,000 cubic feet, depending upon management constraints.

A high number of subalpine fir seedlings are becoming established under lodgepole, aspen, and Douglas fir overstories and may affect the future commercial quality of many stands. Without management activity, such as harvesting, favoring the other species, subalpine fir will become the major stand component. This could have an important effect on the merchantability of forest products on BLM-administered lands. Subalpine fir is a less desirable commercial species because of its lower strength and nail holding characteristics and its higher susceptibility to rotting and higher warpage percentage.

## Present Practices

The forest management activities in the Green River planning area are guided by existing management framework plan documents and by various mandates, directives, and policies.

Forest management activities consistent with sustained yield and multiple use are designed to provide the

## AFFECTED ENVIRONMENT

public (both individual and commercial users) with forest products.

Certain forested acreages have harvest method and equipment use restrictions to protect other resources. These restrictions were not referenced in the MFPs, but were referenced in the allowable cut calculations in 1984. One restriction prohibits conventional tracked or wheeled skidding equipment on slopes in excess of 45 percent to protect watershed values. The 45 percent break is used because it is the limit that wheeled and braked vehicles can safely operate without creating significant soil disturbance. Another restriction prohibits clearcutting within 100 feet of live water. Buffers of 100 feet around streams and slopes greater than 45 percent were placed in restricted or deferred management actions in the allowable harvest calculation (Table 3-8).

On Pine and Little Mountain, management emphasis has been placed on reducing subalpine fir that are overtaking aspen and mixed conifer stands. This effort

is primarily done through some firewood cutting and Christmas tree cutting. However, recent timber sales on Pine Mountain have resulted in defaulted contracts or a lack of interested bidders.

The large expanse of juniper acreage within the southern half of the planning area is currently receiving very little management activity. Only a few permits are sold annually for juniper firewood and Christmas trees. Eventually, it is planned to manage the juniper stands under a Woodland Management Plan which will provide for better long-term management of the woodland type.

The Wind River Front has approximately 4,000 acres of commercial timber. There are also three firewood sale areas that are open to public demand sales. All of the stands in the area are in need of forest management practices which include pre-commercial thinning, commercial thinning, and final harvest. Areas not regenerating naturally or nonstock areas may require tree planting.

**TABLE 3-8**  
**COMMERCIAL TIMBER ACRES IN THE VARIOUS TIMBER**  
**COMPARTMENTS THAT ARE AFFECTED BY OTHER**  
**RESOURCE EVENTS AND/OR VALUES**  
**(by timber compartment)<sup>1</sup>**

Areas	Wind River Front	Pine Mountain	Little Mountain	Totals
Crucial Winter Range	1,031	136	269	1,436
Calving Areas	457	1,683	522	2,662
Streams	169	63	9	242
Standing Water	0	5	0	5
Raptors (1/2 mile)	0	5	3	8
Sage Grouse (2 miles)	0	0	14	14
Sage Grouse (1/2 mile)	0	0	0	0
<b>Totals</b>	<b>1,657</b>	<b>1,892</b>	<b>817</b>	<b>4,367</b>

<sup>1</sup> The commercial forest stands in the Hickey Mountain-Table Mountain compartment are too small and isolated to be considered a viable part of the commercial forest base and thus are excluded from this table.

Reforestation is being accomplished by natural seeding and occasionally by planting containerized stock or direct seeding. The natural method is preferred and is accomplished by designing the harvest method and unit configuration to leave an adequate seed source and to prepare a suitable seed bed. Actual methods will differ

with the species to be reproduced. Most seed bed preparation is presently being accomplished by piling and burning the logging slash and debris. This action provides an adequate seed bed. If the desired results have not been attained within a 5 to 15 year period, then the planting or seeding or both are employed.



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At present, no timber stand improvements (thinnings, etc.) are being conducted in the planning area other than through post/pole and Christmas tree sales. At the present level of harvesting for these products, the acreage treated is insignificant.

### Social and Economic Considerations

Supply and demand side forest management elements are discussed and displayed in the Present Demand section.

Local (Sweetwater County) public attitudes towards timber harvesting vary with the product being harvested and the magnitude of the harvesting project. Large (1 million board foot or larger) sawtimber sales receive some negative feedback from the public. However, most timber harvesting is the result of public demand for fuelwood, not commercial sales and is widely accepted.

Personal use firewood, post/poles sales, and Christmas tree sales are supported by the public.

In 1988 two timber sales on Pine and Little Mountains generated \$6,261 and \$654 respectively. Neither timber sale was completely harvested. Table 3-9 shows timber product sales and revenues for the entire planning area.

### Present Demands

The Green River planning area annually processes approximately 700 permits for the disposal of forest products of which 316 are firewood (800 cords), 13 are post/poles (1,040 posts/poles), 341 are Christmas trees, and 12 are for wildlings. Table 3-9 shows the number of permits issued, product quantities, and values received.

Inability to fulfill some requests and offering sales that did not sell have occurred over the past several years. The former occurs when requests are received for locations where the product: (1) does not occur in sufficient quantities; (2) is inaccessible and the amount sought does not justify construction access; or (3) all harvesting has been administratively prohibited. Secondly, the planning area has approximately three commercial permit requests (for post/pole, firewood, or Christmas trees), with an estimated value of \$250 to \$1,000, that are unable to be filled.

TABLE 3-9

#### TIMBER PRODUCT SALES (Green River Resource Area)

Item (Permits sold)	Price	Amount
<b>1987</b>		
Fuelwood (784 cords)	\$7.50	\$5,880.00
Posts & Poles (1,350 each)	0.30	405.00
Wildlings (80 each)	3.00	240.00
<b>1988</b>		
Fuelwood (689 cords)	\$7.50	\$5,167.50
Posts & Poles (2,356 ea)	0.30	706.80
Posts & Poles (950 ea)	0.40	380.00
Wildlings (55 ea)	3.00	165.00
Christmas Trees (347 ea)	3.00	1,041.00
<b>1989</b>		
Fuelwood (545 cords)	\$7.50	\$4,087.50
Posts & Poles (1,525 ea)	0.40	610.00
Wildlings (50 ea)	3.00	150.00
Christmas Trees (368 ea)	5.00	1,840.00
<b>1990</b>		
Fuelwood (378 cords)	\$7.50	\$2,835.00
Posts & Poles (580 ea)	0.40	232.00
Wildlings (30 ea)	3.00	90.00
Christmas Trees (200 ea)	5.00	1,000.00



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### LANDS

The majority of planning area lands (surface and mineral) are owned by the federal government. Principal non-federal landowners are the Union Pacific Resource Corporation, Rock Springs Grazing Association, and the State of Wyoming.

The checkerboard land pattern which resulted from early railroad grants made by the federal government to the Union Pacific Railroad Company crosses the planning area from east to west with nearly every odd-numbered section within 20 miles each side of the railroad mainline right-of-way under private ownership. This ownership pattern creates a major impact on resource management. Lands north and south of the checkerboard are predominantly solid blocked public lands.

Two major cities (Green River and Rock Springs), one incorporated town (Superior), and several unincorporated populated areas (Reliance, Eden-Farson, Jamestown-Rio-Vista, Point-of-Rocks, Table Rock, Bitter Creek, Burntfork, Lonetree, and McKinnon) are located within the area.

The Bureau of Reclamation, the U.S. Fish and Wildlife Service, and the U.S. Forest Service have large acreages withdrawn for water, wildlife, and recreation projects. The Bureau of Reclamation administers the Seedskaadee and Eden/Farson projects. Applications for partial revocation have been submitted to BLM; they are under review.

The U.S. Fish and Wildlife Service manages the Seedskaadee Wildlife Refuge which was developed as mitigation for the Bureau of Reclamation's Seedskaadee Project (Fontenelle Reservoir). The Flaming Gorge National Recreation Area is administered by the U.S. Forest Service. These withdrawals are not subject to review in accordance with Section 204(1) of the Federal Land Policy and Management Act.

A major power plant, several large coal and trona mines, oil and gas production, the railroad, tourism, and livestock grazing provide a substantial portion of the economic base for the area.

No utility corridors have been designated in the planning area; however, preferred routes north and south of I-80 have been identified and a restriction has been placed on portions of the I-80 corridor due to congestion.

The realty program is primarily driven by local mineral industry, and the majority of rights-of-way are issued in

support of oil and gas development. Three areas within the planning area are currently very active in oil and gas development, Little Colorado Desert, Greater Nitche Gulch, and Wamsutter Arch. Grants to support the coal and trona industries comprise approximately 15 percent of the total.

There has been a minor interest in permits for installation of major utility lines, rig storage, and for filming.

The Recreation and Public Purposes program was active from 1981 through 1985, and the local needs for parks and public facilities largely were met during that period. Current emphasis primarily is on resolving sanitary landfill issues. The Bureau is no longer authorized to issue R&PPs for sanitary landfills, and action is being taken to determine if existing landfills contain hazardous waste.

There are three existing landfill sites within the planning area: City of Green River, Sweetwater County Landfill, and the Point of Rocks Landfill. The City of Green River has closed out the landfill site on its R&PP and has moved onto private ground. They have requested a sale of 40 acres for future landfill use. The approximately 160-acre unused portion of the Sweetwater County Landfill site authorized under R&PP will be reclassified for sale to the County Solid Waste District. A solid waste transfer station will be constructed at Point of Rocks and the R&PP landfill is to be closed. The 2.5-acre transfer station site will be reclassified for sale to the Solid Waste District.

There is a trespass dump site at McKinnon, Wyoming. In a joint County/BLM effort, some of the material has been placed in piles pending Wyoming Department of Environmental Quality approval for burial or transport to a landfill facility. Much of the cleanup remains to be done.

Fifteen sales have been held over the past ten years to provide approximately 2,000 acres of land for community and industrial expansion. In addition, two isolated tracts have been sold to adjacent landowners. Five sales currently are planned to settle longstanding trespass situations. Four exchanges have been processed resulting in the acquisition of 750 acres of land within the planning area (access to timber lands and acreage for an ORV parking lot). Two of these exchanges were for the acquisition of lands within the Rock Springs District.

Exchanges are being planned using Land & Water Conservation Funds to acquire State inholdings within WSAs and the Fort LaCade Stage Station.

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Approximately 58,900 acres are under right-of-way within the planning area. Of this total, there is 6,200 acres of oil and gas access road and 20,900 acres of pipeline. The remaining acreage is for powerlines, waterlines, telephone cables, highways and other facilities. An average of 109 realty grants are processed annually. Of these, 33 percent are oil and gas pipelines and 30 percent are APD access roads.

There has been no serious demand for desert land entries in the planning area.

A communication site plan has been approved for Aspen Mountain to provide guidance in the management of existing and new facilities on this prime site.

### Withdrawals

Withdrawals are used to preserve sensitive environmental values, protect major federal investments in facilities, support national security, and provide for public health and safety. They segregate a portion of public lands and suspend certain operations of the public land laws such as desert land entries or mining claims. There are overlapping mineral withdrawals within the area: Coal/Oil Shale (263,965 acres), Phosphate/Oil Shale (480 acres), and Phosphate/Coal (160 acres). It is now federal policy to restrict all withdrawals to the minimum time required to serve the public interest; maximize the use of withdrawn lands consistent with their primary purpose; and eliminate all withdrawals that are no longer needed.

### Access/Transportation

Access within the planning area is generally good, although on waters other than the Green River, access is limited. Complicating access is the land pattern created by the Union Pacific Railroad Grant which created a checkerboard land pattern 20 miles on each side of the railroad right-of-way (Map 61).

Due to cooperation between the existing landowners and leaseholders, restriction of access has not been a major problem in the Green River planning area checkerboard area.

The BLM transportation system serves resource programs. BLM-maintained roads provide access to range improvements, recreation areas, community pits, etc. The public transportation system includes interstate highway, state highway, county roads, BLM roads, airports, heliports, river access, and railroads.

Interstate 80 is a 4-lane federal highway and is maintained year round by the Wyoming State Highway Department. The highway is closed several times each year (1-2 day periods) during the winter due to icy road surface and/or blowing and drifting snow. This highway right-of-way is 400 feet in width. There are 224.57 miles of federal highways. The policy of the Sweetwater County Planning and Zoning Commission is to allow no development within 1,000 feet of the Interstate. Signs and displays must be at least 600 feet from the highway boundary, and junkyards must be at least 1,000 feet away (23 CFR 750, 751).

State highways within the planning area are Wyoming 28, 191, 430, 530, 370, 371, 372, and 373. There are 245.42 miles of state highway. Right-of-way widths vary, but are normally 200 to 400 feet in width.

County roads total 950.25 miles and are mostly unpaved. The majority of these roads were constructed under authority of R.S. 2477 (43 U.S.C. 932, repealed October 21, 1976). Wyoming State statutes limit total right-of-way width for county roads to 66 feet; however, the running surface of many of these roads is from 30 to 100 feet in width. A Notice of Filing was made on these roads by the counties, and the BLM issued documents recognizing the width as 50 feet on each side of the centerline.

BLM roads total 452.73 miles. These roads are generally 1-lane roads which vary in width from 14 to 24 feet.

The Rock Springs Municipal Airport is located on a mesa eight miles east of Rock Springs. There are two lighted paved runways, a commercial airport terminal, and numerous hangars. The main runway is 10,000 feet by 150 feet, and the crosswind runway is 5,243 feet by 75 feet. There is no control tower; however, there is an FAA Flight Service Center located at the airport. The Sweetwater County Planning and Zoning Commission has designated a protective zone around the airport which limits the height of any facility which might be constructed in that area.

The City of Green River owns an airstrip located approximately four miles south of the city. The runway is 6,000 feet long and 125 feet wide with 25-foot landing strips on either side of a 75-foot sagebrush-grass center. The airstrip is bladed once a year by the City of Green River, and receives only incidental use. There are tie-downs at the strip. Strong cross winds in the area prohibit regular use of this field.



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There are several heliports in the planning area including the BLM heliport north of Rock Springs and the hospital heliport within the city limits.

River access is provided by several boat ramps located along the Green River near Flaming Gorge Recreational Area and the Fontenelle Recreation Area.

The Union Pacific Railroad, which provides freight service to the area, generally parallels I-80. Spur lines serve the coal and trona mines and the Chevron Fertilizer Plant southeast of Rock Springs. The width of the mainline railroad is 200 feet.

### LIVESTOCK GRAZING

Livestock grazing is authorized in 79 grazing allotments on approximately 3.6 million acres in the planning area. Implemented grazing use in the planning area is found in Appendix 9-6. In addition, there are about 15,100 acres of unallocated BLM-administered lands scattered throughout the planning area.

Livestock grazing on BLM-managed public land in the planning area is authorized under section 3 of the Taylor Grazing Act of 1934. "Section 3" permits authorize grazing on lands inside of grazing district boundaries. In addition to 78 allotments with section 3 permits, there is one allotment (Eden-Farson) with grazing use authorized on an annual basis pending final review of BOR withdrawals (Map C).

The current authorized preference is 318,641 AUMs. However, for the past 5 years, only 180,000 to 200,000 AUMs have been activated.

The rangeland program in the planning area emphasizes management of forage for livestock and wild horses, and incorporates needs for wildlife habitat and protection of riparian and watershed values. The specific goals and objectives of the program have and are being accomplished through careful planning at the activity level, with attention given to proper placement of rangeland improvements, distribution of livestock, kind and class of livestock, season of use, suitable grazing systems, plant and animal requirements, and vegetative land treatments. Significant progress toward meeting the overall objectives of the Big Sandy and Salt Wells Management Framework Plans has been achieved.

In 1986, the Big Sandy and Salt Wells Resource Areas were combined to form the Green River Resource Area. The Big Sandy Resource Area included the part of the Green River Resource Area north of I-80. The Salt

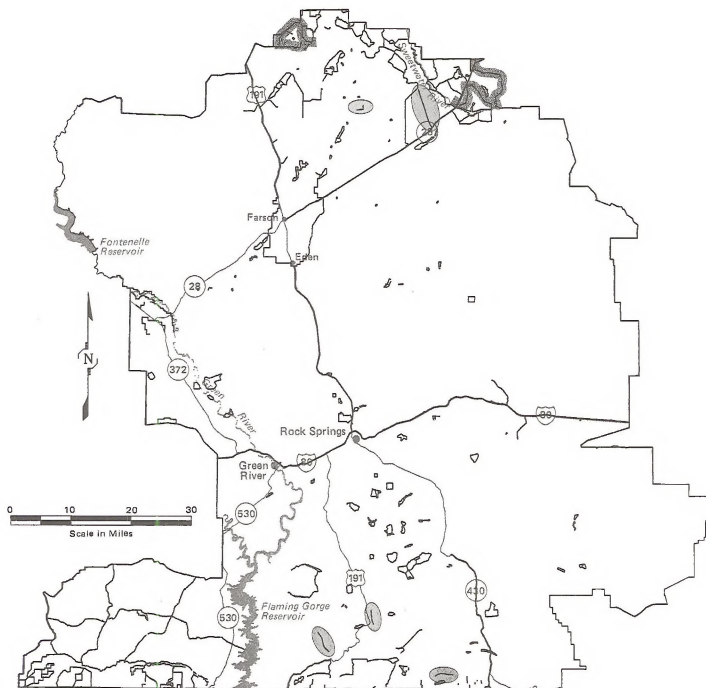
Wells Resource Area included the part of the Green River Resource Area south of I-80. However, the boundaries of the two previous grazing EIS areas did not coincide with the resource area boundaries. The Salt Wells-Pilot Butte Grazing EIS addressed all lands south of I-80 and the checkerboard lands north of I-80. The Sandy Grazing EIS addressed only the predominantly solid block public lands north of the checkerboard lands.




The management actions proposed in both grazing EIS areas have continued. In both EIS areas objectives were identified through activity plans called allotment management plans (AMPs). There are 33 AMPs in the planning area and eight more to complete.

Allotment Management Plan evaluations have been completed for the White Acorn (13001), Little Prospect (13002), and Bar-X (13008) allotments and are available for review in the planning area allotment files. Based on the evaluations and permittee concurrence, new or revised objectives have been established for these allotments.

A number of range improvement projects have been constructed both for the enhancement and protection of watershed and wildlife values and for the management of domestic livestock grazing. Some of these projects are water developments, vegetative manipulations, and fences (Map 62). Map C displays all of the range improvement projects in the planning area. Appendix 9-7 is a complete list of range improvements constructed since 1983. All projects have been authorized under cooperative agreements or permits, depending on overall benefits and objectives and private investment levels. The construction of range improvement projects in conjunction with a suitable grazing system began and has continued primarily in "I" category allotments.

All of the allotments in the planning area have been assigned to either an M, I, or C category. An explanation of the allotment categorization process can be found in Appendix 9-8. There are currently 31 I, 18 M, and 29 C category allotments as shown in Appendix 9-1. One allotment under BOR administration has not been categorized (Eden/Farson). Should the Bureau of Reclamation revoke the withdrawal, categorization could occur. The allotment categorization process helps managers identify the intensity of management action needed for each allotment. The categories broadly define management objectives and future management requirements. Multiple-use management prescriptions can then be developed and priorities established for distribution of available funds and personnel.



-  Existing Fence
-  Proposed Fence
-  Fence Reconstruction and/or Modification

Map 62  
**Existing and  
 Proposed Fences**  
 Green River Planning Area



## AFFECTED ENVIRONMENT

Since the creation of the Green River Resource Area in 1986, the respective rangeland monitoring efforts that were under way in the Big Sandy and Salt Wells Resource Areas have continued. Appendix 9-1 reflects the type of monitoring information that has been collected in each allotment. In the Sandy EIS area, a majority of the monitoring studies were established between 1981 and 1984, primarily in allotments with completed AMPs. These studies included actual use, vegetative utilization, rangeland condition and trend, and precipitation.

The rangeland monitoring effort for the Salt Wells-Pilot Butte EIS area began during the 1984 field season. The I category allotments were given first priority, and were followed by the M and C category allotments. Appendix 9-1 displays the 7 initial I category allotments to have trend studies established with implemented AMPs in accordance with the 1984 Record of Decision and Rangeland Program Summary for the Salt Wells-Pilot Butte EIS (USDI 1984). All of the allotments in the Salt Wells-Pilot Butte EIS area have had actual use, utilization, and precipitation information collected.

The trend transects established in allotments with existing AMPs (especially AMPs over five years old) have been primarily in upland vegetation sites. However, many of the more recent AMPs contain objectives for allowable utilization levels and plant composition improvement in riparian areas. In 1987, a special "greenline" transect was developed in the Green River Resource Area to help establish riparian area vegetative composition objectives that could be realized through management. This transect has been established in several allotments in both EIS areas.

Rangeland monitoring information has been analyzed for all of the allotments in the planning area. Appendix 9-9 contains a description of the current allotment situation according to this analysis. In addition, range specialists, in conjunction with resource specialists in other programs, have identified specific conflicts or problems that currently exist or have potential to exist in each allotment. Appendix 9-10 contains a list of these conflicts and problems. These uses affect forage availability, condition and utilization and can create conflicts with livestock grazing management. These conflicts are especially apparent in the I category allotments. Specific descriptions of uses and conflicts are on file in the Resource Area Office.

## MINERALS AND GEOLOGY

Most of the resource area falls within a broad region of subdued relief that has been termed the Wyoming

Basin physiographic province (Fenneman 1931). Portions of this province lying entirely or partially within the boundary of the resource area are: the Green River, Great Divide, and Washakie Basins and Rock Springs Uplift (Figure 9). The province is made up of high plains and plateau areas and is bordered by mountain ranges and major uplifts of the Central Rocky Mountain Province. The southern end of the Wind River Range extends into the resource area on its northeast border. Surface features reflect erosion by wind and water in an arid, cold-temperature environment. In some instances, they have been modified by faulting or volcanic activity.

## Historical Geology

Figure 10 lists formations present in the resource area and gives a brief lithologic description of each unit.

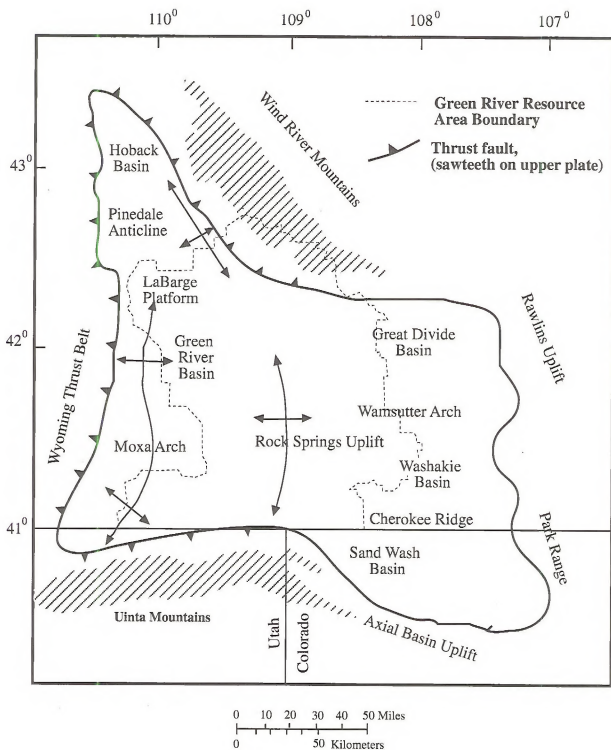
The Precambrian era is evidenced in outcrops of granitic rock in the Wind River Range (dated at 2.6 billion years) and metamorphic rocks that may be more than 3 billion years old.

For most of the Paleozoic era, resource area lands were situated just east of a marine basin located close to the equator. It was frequently covered by warm shallow seas and was mainly the site of carbonate deposition with a high percentage of clastic sediment. Depositional sequences were interrupted by several withdrawals of the sea, followed by erosional periods. The boundary between marine basin and shallow water parallels the present arcuate trend of the Thrust Belt (Figure 10), lying just west of the resource area.

The area was emergent following the Precambrian and was gradually covered by a sea extending from the west depositing first the Flathead Sandstone, then Gros Ventre Formation shales that thin eastward across the region, and finally carbonate sequences of the Gallatin Limestone.

Additional sequences may have been deposited over the region, but were later removed by erosion after withdrawal of the sea (Ross 1976). As a new sea began to flood the continent, the Bighorn Dolomite was deposited. It occurs only in the northwest part of the resource area. Deposition in a near shore marine environment persisted for a long period, but a new withdrawal of the sea was followed by a period of extensive erosion, removing all sediments deposited after the Bighorn Dolomite.





**Figure 9**  
**Greater Green River Basin**

AGE	LOCAL FORMATION NAME	ROCK TYPE	GENERAL DESCRIPTION
CENOZOIC	Quaternary: Alluvial, windblown, landside and igneous deposits		
	Bishop Conglomerate		Clasts of red quartzite, gray chert, and limestone in a white tuffaceous sandstone matrix.
	Bridger Fm.		Olive and drab banded tuffaceous sandstone and shale.
	Green River Fm.		Thinly laminated chalky shale, buff-brown sandstone, soft marly shale, and black oil shale.
	Wasatch Fm.		Red and gray conglomerate; shale and sandstone, coal bearing.
	Fort Union Fm. (Almy)		Gray carbonaceous shale and sandstone with ferruginous concretions, coal bearing.
	Lance Fm.		Thick to thin bedded gray to buff sandstone with gray to brownish shale, coal bearing.
	Lewis Shale		Sandy shales and clays of gray or drab color with calcareous concretions.
	Almond Fm.		Fox Hills Sandstone occurs between Lance and Lewis in eastern part of Resource Area.
	Ericson Fm.		White and brown sandstone interbedded with gray shale and gray carbonaceous shale, coal bearing.
MESOZOIC	Rock Springs Fm.		Upper and lower massive white conglomeratic sandstone separated by a rusty zone of thin bedded sandstone and siltstone.
	Blair Fm.		Buff to light gray sandstone alternating with thick coal beds and carbonaceous shale.
	Hilliard Shale		Gray marine shale and ripple marked sandstone.
	Frontier Fm.		Dark gray marine shale, lens of fine-grained sandstone.
	Mowry Shale		Sandstone and gray shale.
	Dakota Horizon Fm.'s		Gray siliceous shale.
	Stump-Presse Twin Creek Fm.'s		Gray sandstone and shale, variegated shale, and white limestone.
	Nugget Fm.		Variegated shale, limestone, siltstone, and evaporite.
	Ankareh-Thaynes-Woodside - Dinwoody Fm.'s		Gray and red sandstone.
	Park City Fm.		Variegated shale, siltstone, and limestone.
PALEOZOIC	Tensleep Fm.		Dark chert, shale, dolomite and phosphorite.
	Amesien Fm.		Gray sandstone and dolomite.
	Madison Limestone		Gray or tan limestone and dolomite.
	Derby Fm.		Massive, blue and gray limestone and dolomite.
	Big Horn Dolomite		Varicolored shale and siltstone and brown dolomite and limestone.
	Gallatin Limestone		Massive gray dolomite.
	Gros Ventre Shale		Gray and tan limestone.
	Flathead Sandstone		Gray and green shale.
			Red quartzitic sandstone.
PRECAMBRIAN			Metasedimentary and granitic rocks.

Figure 10  
Generalized Stratigraphic Nomenclature Chart

## AFFECTED ENVIRONMENT

As marine waters again moved into the area they deposited carbonate sediments (Darby Formation) in a shallow marine setting. The Darby was probably deposited in the Great Divide and Washakie Basin areas, but later was removed by erosion. The overlying Madison Limestone is open marine in its lower part and shows evidence of shallower marine conditions in its upper part (Rose 1977). Limestones were being deposited on the east and thicker dolomite and anhydrite were being deposited in the west. Some erosion of the top of the Madison occurred after deposition.

Above the Madison, the Amsden Formation contains a widespread sandstone unit, present at its base, that is overlain by a middle unit of red shale, siltstone and sandstone, that may have been derived from emergent areas of Precambrian rocks in southeastern Wyoming. Additional evidence for uplift is seen by the presence of an erosion surface occurring within the Amsden. The upper part is made up of interbedded limestone, dolomite, siltstone or sandstone, and gray shale (Petersen 1988).

Above the Amsden lies the Tensleep Sandstone. The last major marine invasion spread across the area after deposition of this sandstone. During deposition of the overlying Park City Formation, a deep marine basin persisted to the west and shallow marine conditions persisted across the resource area to a shoreline in central Wyoming. East of the marine basin, Park City Formation carbonate deposition predominated over a broad zone that extended across the resource area. Intertonguing sandstone in the carbonate sequences represents shoreline clastic sands transported into the northern part of the resource area.

During the Mesozoic era, the North American continent gradually drifted to northern latitudes. Most of the Mesozoic rocks within the Resource Area, therefore, were deposited in the northern subtropical region. A mountain building event in the Thrust Belt and other mountain building in the rest of the state had a profound effect during Late Mesozoic and Early Cenozoic times.

An erosion surface separates the Paleozoic and Mesozoic rocks indicating that the region was emergent at that time. Later, marine conditions returned to the area depositing the Dinwoody Formation. Intertonguing of marine carbonates and clastics within the Dinwoody reflect sea level fluctuations during deposition. The Dinwoody intertongues with continental red beds of the Woodside Shale as the sequences are traced to the southeast. Marine sedimentation persisted with later deposition of carbonate and siltstone units of the Thaynes Limestone and lower Ankareh Formation.

Regional uplift then began and permanently changed the depositional patterns that had dominated the region. The region became emergent and a widespread erosion surface separated the lower Ankareh marine sequences from the continental deposits of the upper Ankareh. Terrestrial conditions persisted, after Ankareh deposition, as can be seen in the widespread deposits of the Nugget Formation. It is made up of a vast blanket of sand that was deposited in coastal dunes (Picard 1975).

Overlying the Nugget, limestones and shales of the Twin Creek Formation were deposited when marine conditions returned. The Twin Creek changes to the east and south into red silty shale and anhydrite. As the sea retreated interbeds of marine and non-marine sandstone and siltstone of the Preuss and Stump Formations were deposited. After the seas withdrawal, the lower part of the Morrison Formation was deposited.

During the Cretaceous age, episodic eastward faulting associated with mountain building continued in the Thrust Belt (Figure 10). Sediments derived from faulting accumulated in a depression extending across the resource area. Deposition, according to Wallem, Steidtmann, and Surdam (1981) was controlled by the interaction between mountain building pulses of clastic sedimentation and a fluctuating sea level. These deposits are therefore made up of clastic marine, transitional marine, and non-marine units. In contrast to earlier periods, sedimentation occurred in a shallow sea located generally east of the resource area, with clastic source areas located generally to the west.

The upper Morrison Formation of Early Cretaceous age was laid down as a sequence of river and lake deposits. Thrust fault activity to the west initiated several periods of accelerated deposition of clastic sediments in this area. During times when faulting slowed, fine-grained clastic sediments were deposited in a brackish coastal region or marine environments. These units make up the Dakota Formation and Mowry Shale. The Frontier Formation overlies the Mowry and is made up of predominantly river deposits in its lower part and mixed river and marine in its upper part. Two delta complexes, delivered Frontier sediment into the resource area. A western delta drained the Thrust Belt and a northern one, the area of the present day Wind River Range.

The next marine incursion came from the east across the region and resulted in the deposition of the thick Hilliard Shale. Movement on the Rock Springs Uplift began during deposition of the Hilliard (Roehler 1965). The uplift continued to be a positive area during deposition of the Blair Formation. The overlying Rock Springs Formation was deposited along a northeast-southwest

## AFFECTED ENVIRONMENT

shoreline that transected the uplift area. The continental part of the formation occupied the northwest part of the uplift and is represented by river sandstone, carbonaceous shale and coal beds. Southeastward these rocks undergo a change to beach and barrier island sands, and offshore sands and marine shale.

The overlying Ericson Sandstone is a river deposit, derived predominantly from the Thrust Belt and in part, from the newly uplifted Moxa Arch just west of the resource area and deposited across the Rock Springs Uplift area. The Almond Formation marks a change from stream sedimentation of the Ericson to swampy lowland deposition. Throughout much of the uplift, the Almond Formation is divisible into a lower part including floodplain, channel, swamp, and lake deposits, and an upper sequence of marsh, mudflat, lagoonal-bay, barrier beach, and offshore marine deposits.

The Lewis Shale represents the last major invasion of a seaway into the area and only covered the area from the Rock Springs Uplift, eastward. Thereafter, a nearly complete withdrawal occurred during the deposition of the overlying Lance Formation. This depositional phase was brought to an end by mountain building and ultimate complete withdrawal of the seas. By the end of the era, the North American continent was approaching its present day latitudes.

At the onset of the Cenozoic era, the Thrust Belt was in a late stage of development and the ancestral structures of the Uinta Mountains, Wind River Range, Sierra Madre Range, and Granite Mountains had formed on the margins of the Green River, Great Divide, and Washakie Basins. These basinal areas were then largely filled with river and lake deposits nearly burying these mountain ranges. Volcanism to the north contributed large amounts of volcanic sediment to these basins. Climate started out warm-humid to arid-subtropical but gradually cooled. Finally, a period of large-scale regional uplifts re-excavated the region and brought about the present relief.

During the Tertiary era, basin floors and slopes of the surrounding mountains were probably heavily forested and well populated with mammals, reptiles, and other vertebrates. Streams flowing from the mountains distributed sediment in flood plains on the basin floor. The low-lying areas were occupied by swamps, ponds, and lakes. Sediments are represented by the Fort Union and Wasatch Formations. After their deposition, the Lake Gosiute system developed, laying down sediment of the Green River Formation (Figure 11). Climate changed markedly to more arid cycles, and primates and many other mammals, as well as crocodiles and turtles, began to disappear from the area.

The onset of volcanic activity in the Absaroka-Yellowstone region resulted in large amounts of volcanic debris being introduced by streams into these basins. This influx of sediment, coupled with the decline in mountain building activity, caused the basin in the area to be filled. Late Tertiary time brought about the end of this depositional cycle with a major uplift of the Rocky Mountains. With uplift, streams that had been flowing southward across the plain-like surfaces began to cut downward. Gradually, our modern landscape began to develop as the older structures were exposed below the sediment cover.

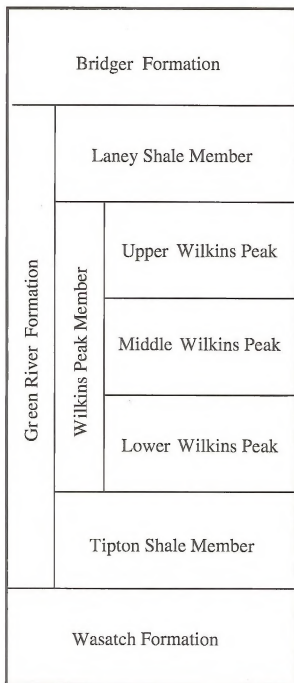
During the Quaternary period, final touches were made to the landscape of the region. The surrounding mountains were exhumed and the basins re-excavated to their present form. The high mountains were glaciated several times during the Ice Ages. Some of the glaciers may have reached the edge of the basin and deposited sediment around its margin. Local volcanic centers developed as well as the Killpecker Dune Field.

## General Geology

The Green River Basin is a large structural and topographic basin (Figure 9) drained by the Green River and its tributaries. In the north, this river flows in a broad shallow valley, while to the south (south of the Union Pacific Railroad) it becomes a canyon that reaches a depth of 1,000 feet (305 meters). The floor of the basin lies between 6,000 and 8,000 feet (1,820 to 2,430 meters) above sea level, and is primarily a flat to gently rolling plain. Tertiary sediments underlying the basin are predominantly soft and weak, with only a few more resistant beds within the section. Where the rocks are flat-lying, the resistant beds cap low, flat tablelands and buttes.

The outer margin of the Green River Basin is defined by a series of escarpments formed by tilted beds of the Green River and Wasatch Formations (Bradley 1964). North of the town of Green River, the main escarpment forms a conspicuous bluff known as White Mountain.

The flat-lying strata of the Green River Basin exert little geologic control on drainage, resulting in a dendritic drainage pattern. Gravel terraces have developed along most of the major streams and their elevations range from 5 to 10 feet (1.5 to 3 meters) above river level to as much as 500 feet (152 meters) (Blackwelder 1950). The lowest terraces are slightly modified by erosion and are younger than the last major glacial period (Blackwelder 1950). Higher and older terraces formed as a result of fluctuations in sedimentation brought on by successive glacial advances and retreats. They are progressively



Source: Deardorff, 1963

Figure 11  
Generalized Stratigraphic Section  
for the Green River Basin



## AFFECTED ENVIRONMENT

more modified by erosion and are commonly cut by canyons and deep ravines so that only scattered remnants remain. Most gravel pits in the Resource Area have been located on these terraces.

The widespread erosion that has shaped the floor of the Green River Basin has resulted in the development of considerable areas of intricately dissected badlands. Badlands are best developed in the soft, weak, mudstone of the Bridger Formation, which is relatively impervious and precludes infiltration of rain water. As a result, runoff is concentrated on the surface, collecting as overland flow which erodes intricate networks of rills and gullies. As the gullies deepen, the ground surface becomes highly dissected.

The Moxa Arch (Figure 9) lies in the western part of the Green River Basin. It is a large anticline that extends northward from the north flank of the Uinta Mountains at the Bridger Lake Field to the Big Piney-LaBarge Field. Folding of the arch involved Precambrian basement rocks (Wiltshko and Dorr 1983) and subsurface data indicate that the main folding event occurred in the Late Cretaceous, causing erosion of older Mesaverde rocks on the crest of the arch. Younger Cretaceous and Tertiary rocks were then deposited across the unconformity and are not folded (Thomalds 1973).

The Pinedale anticline (Figure 9), in the northern Green River Basin, is a large structure, approximately 45 miles (72 kilometers) in length and 6 miles (9.7 kilometers) in width. The flanks appear to be relatively symmetrical, but the west limb may be reverse faulted (Gries 1983). The structure probably formed during the uplift of the Wind River Mountains. Only the southern end of the anticline lies within the Resource Area.

The vast majority of surface rocks in the Green River Basin are uncut by faults. However, they are locally faulted around the margins of the basin. The Continental Fault is approximately 55 miles (88.5 kilometers) long (Bradley 1964). It begins east of the resource area, passes between South Pass City and Oregon Buttes, and passes out again on its western end. The Henry's Fork Fault is about 20 miles (32 kilometers) long, with most of its trace lying south of the Resource Area, in Utah. A segment about 4 miles (6.4 kilometers) long lies in T. 12 N., Rs. 108 and 109 W. The fault may have had as much as 12,000 feet (3,658 meters) of vertical movement (Hansen 1969).

The Rock Springs Uplift (Figure 9) is a broad, elliptical anticline that began to form after the Lance Formation was deposited in the Late Cretaceous (Roehler 1965). Erosion has uncovered a sequence of Tertiary and Upper Cretaceous rocks. The rocks exposed on the

uplift are cut by a number of faults and data indicate that the west flank of the uplift is bounded by a thrust fault that does not reach the surface (Love and Christiansen 1985; Bradley 1964).

The crest of the Rock Springs Uplift is occupied by a large depression, called the Baxter Basin, which is carved into the soft weak rocks of the Baxter Shale. The Baxter Basin is about 15 miles (24 kilometers) wide and 40 miles (64 kilometers) long and its floor is primarily a flat, featureless plain interrupted by considerable expanses of dissected badlands. This basin is enclosed by a series of concentric ridges formed by tilted, relatively resistant sandstone beds exposed on the flanks of the uplift. The ridges are separated by valleys that are eroded into softer beds of shale and coal.

Bitter Creek, a tributary to the Green River, flows entirely across the uplift in a westerly direction. It cuts through notches almost 1,000 feet (300 meters) deep on the west flank of the Rock Springs Uplift.

The Leucite Hills, at the north end of the Rock Springs Uplift, are the remnants of a Quaternary volcanic field. They form a series of buttes that rise precipitously above the surrounding plains. Steamboat Mountain and South Table Mountain are buttes capped with old lava flows. Boar's Tusk, just northwest of the northern end of the uplift, is the remnant of a volcanic neck, as is Pilot Butte, the westernmost volcanic outcrop.

At the far northern end of the Rock Springs Uplift, is an extensive dune field called the Killpecker Dunes. This dune field is at the western end of a narrow belt of dunes that stretches 150 miles (240 kilometers) to the east. The outer margins of the field are occupied primarily by dormant dunes, while active dunes are found in the central portion of the field.

The Great Divide Basin is a structural basin (Figure 9) underlying a topographic and internally drained basin (Love 1961). The Continental Divide splits near the southeast end of the Wind River Range and converges again at the north end of the Sierra Madre Mountains. Lake, swamp, and stream deposits of Tertiary age make up most of the bedrock and surficial deposits are predominantly soft and weak, causing the basin to be nearly flat and featureless, with occasional intermittent lakes and dry flats in the lowest areas. Low hills and ridges form the high ground that marks the two branches of the Continental Divide. Altitudes range from 6,500 to 7,500 feet (1,980 to 2,290 meters) above sea level.

The largest, most conspicuous features of the Great Divide Basin are dry-lake flats. These broad shallow depressions are the sites of former lakes that are being



## AFFECTED ENVIRONMENT

filled in by debris washed in from surrounding highlands (Wyant, et al. 1956). Isolated sand and gravel terrace deposits (Pipiringos 1961), with at least eight different terrace levels have been recognized (Sheridan, et al. 1961). The youngest features are the Killpecker Dunes which extend across this basin.

The Wamsutter Arch (Figure 9) is a low relief anticline, extending eastward from the Rock Springs Uplift and separates the Great Divide and Washakie Basins.

The Washakie Basin is a structural and topographic basin, south of Interstate 80 and east of the Rock Springs Uplift. The overall configuration of the basin is that of a very broad, roughly square bowl shape with an outward facing escarpment, developed on the Laney Shale Member of the Green River Formation. On the west the escarpment is known as Kinney Rim, and on the north it is known as Laney Rim. Altitudes above sea level range from 6,100 feet (1,860 meters) in drainages to 8,700 feet (2,650 meters) on Pine Butte.

Lake and river deposits of Tertiary age are exposed in badlands such as Adobe Town and on ridges across the Washakie Basin. Younger sediment and sand dunes fill the stream valleys and cover some areas of low relief. Only intermittent streams drain this basin. Most, such as Shell Creek and Sand Creek, are tributaries to the Little Snake River in Colorado. The north end of this basin drains into Bitter Creek, a tributary of the Green River.

The dominant feature of the Southern Wind River Range in the planning area is a very gently dipping erosion surface comprised of Tertiary sediments (Bayley, et al. 1973). This surface blends the Precambrian core of the range with the Rock Springs Uplift and Green River Basin to the south and southwest. Relief in these foothills is 300 to 500 feet (90 to 150 meters). The Sweetwater River and its tributaries drain the area.

This range is one of the most spectacular of the Precambrian uplifts in the state. It is basically a huge block of granite that has been moved by faulting southward over the Green River Basin. This fault is called the Wind River thrust fault and is covered by sediments on its southern end where it extends into the resource area.

### Oil and Gas Geology

#### Historical Background

Between 1900 and 1916, a number of shallow wells were drilled on the Rock Springs Uplift in search of oil. A

number of oil and gas shows were encountered but no wells were productive. Additional work began in the 1920s with the first discovery being the South Baxter Basin field in August of 1922. The Ohio Oil Company tested the Dakota Formation, recovering 36 million cubic feet of gas per day. Drilling activity has occurred almost continuously since this discovery and has resulted in the location of a large number of gas and oil fields along the axis of the Rock Springs Uplift and to the east, beyond the resource area boundary. Baxter Basin South is still productive and had produced 133 billion cubic feet of gas and 5,934 barrels of oil through 1989.

Additional fields discovered along the crest of the Moxa Arch near the present-day town of LaBarge led to activity that eventually extended into the resource area. The first Moxa Arch discovery within the resource area was the Church Buttes gas field, a Dakota Formation discovery, found by Mountain Fuel Supply Company in 1946 using seismic interpretation methods. Initial production was 12.5 million cubic feet of gas per day and 146 barrels of condensate. Church Buttes field had produced 358 billion cubic feet of gas and 274,545 barrels of oil through 1989.

Prior to 1926, no exploratory oil and gas well had been drilled in the Washakie Basin. With the discovery of natural gas at Hiawatha on the Wyoming-Colorado border, interest was kindled. The discovery well gaged 45 million cubic feet of gas per day from the Wasatch Formation. Subsequent exploratory activity resulted in discoveries of major fields, mostly in Cretaceous rocks, at Canyon Creek in 1941, Table Rock in 1946, Trail and Desert Springs in 1958, Patrick Draw in 1959, and at Jackknife Springs Field in 1972.

Exploration and development continues today. The number of drilled wells in the resource area are listed by status and county on Table 3-10. Methods and procedures to conduct geophysical exploration leasing, well permitting, drilling operations, development, production, and subsurface practices are described in Appendix 7-3.

### Origin of Oil and Gas

Crude oil and natural gas are composed chiefly of hydrocarbon compounds and are found primarily in sedimentary rocks. They are mostly confined to sediments of marine origin, although minor amounts have been found in freshwater sediments. Petroleum hydrocarbons are derived from organic matter of microscopic plant and animal origin. This is substantiated by the fact that the largest petroleum accumulations occur in sedimentary basins with widespread organic debris and that

## AFFECTED ENVIRONMENT

petroleum hydrocarbons have been found closely associated with little-altered organic matter (Skinner 1976).

The earliest formed petroleum compounds tend to be very heavy, viscous oils. With increasing temperature and pressure, the heavy oils are "cracked," forming lighter oils and natural gas. The lighter constituents are

more mobile and may migrate away from the rocks containing the organic debris, called the "source rocks," into more porous and permeable rocks called "reservoir rocks." Oil and gas are "trapped" when they migrate to a place where further movement is barred by a structural and/or stratigraphic feature, i.e., faults, impervious beds, etc. Both source and reservoir rocks are widespread

TABLE 3-10

### NUMBER OF WELLS BY STATUS AND COUNTY

County	Gas	Oil	Injection	Plugged & Abandoned	Suspended	Total
Fremont	0	0	0	23	0	23
Lincoln	122	14	1	48	0	185
Sublette	176	65	3	154	4	402
Sweetwater	785	476	21	1,123	10	2,415
Uinta	25	24	0	38	1	88
Total	1,108	579	25	1,386	15	3,113

throughout the resource area as evidenced by the large number of fields so far discovered. The resource area thus has a high potential for the occurrence of oil and gas in economic amounts.

### Trapping Mechanisms

Figure 12, a cross-section through the Resource Area, portrays the most common trap types. A structural trap, as illustrated on the Rock Springs Uplift, has a closure in which oil and gas accumulate after migrating up-dip through strata. An impervious cap rock seals the accumulations against further vertical movement while water generally underlies and confines the hydrocarbon accumulation against the cap rock. The anticlinal structure, possibly modified to some extent by faulting, typifies the structural trap in the Resource Area.

Exposed structures are readily apparent and thus received the earliest and most extensive exploration effort. Buried, or subsurface structures are commensurately more difficult to locate, requiring detailed geophysical and geologic analysis. An example of a buried structure is also shown in the Moxa area of the Green River Basin.

Stratigraphic traps, as illustrated in the Red Hill and Patrick Draw areas of the Great Divide Basin, may depend upon a change in the amount of space between grains of sediment (porosity) and/or how well those

spaces are connected (permeability) to block the migration of petroleum hydrocarbons, allowing an accumulation of hydrocarbons to develop. Changes in porosity and permeability occur as a result of depositional history, such as the deposition of sand bars and alluvial stream deposits, or the truncation of permeable strata with subsequent deposition of an overlying impermeable formation. They may also result from later alteration and metamorphism (such as solution leaching) to form a porous, permeable rock, or from mineral deposition in pre-existing pores to form a permeability barrier. Stratigraphic situations which may trap a hydrocarbon accumulation are not apparent at the surface as in the case of the surface anticlines, and in only a limited manner are indicated by geophysical data. Their location depends upon detailed and time-consuming geological study.

### Oil and Gas Occurrences

Many producing fields are aligned along two major anticlinal structures. These structures are the Moxa Arch in the Green River Basin and the Rock Springs Uplift. Fields in the Washakie Basin, Great Divide Basin, and on the low relief Wamsutter Arch separating these two basins, are predominantly stratigraphically trapped. Only a few small fields lie outside these major producing areas. Most fields produce primarily from Cretaceous age sediments. A number of other younger Tertiary formations and older Mesozoic and Paleozoic age for-

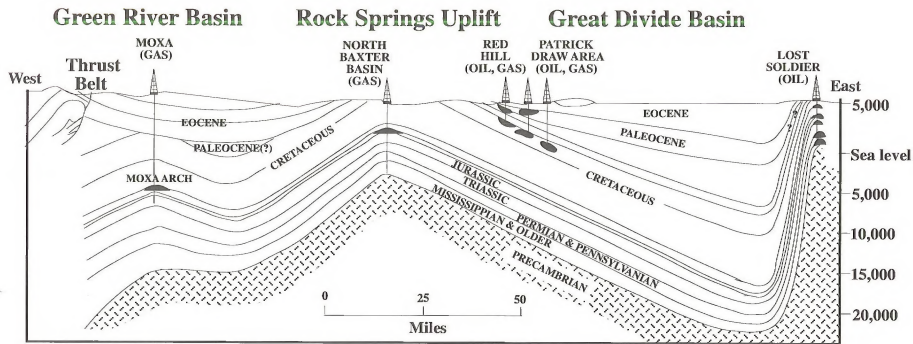


Figure 12  
Cross Section of Green River Basin and  
Adjacent Areas, Wyoming

## AFFECTED ENVIRONMENT

mations produce to varying degrees throughout the resource area.

Hydrocarbon accumulations on the Moxa Arch are formed by both structural and stratigraphic traps. Most of the pre-Tertiary production comes from buried structural traps and combination stratigraphic-structural traps which formed during Late Cretaceous deformation. The Arch persisted as a topographic feature during the early Tertiary. At this time, stratigraphic traps were formed in sands that were being deposited across the platform.

Hydrocarbon-bearing structures occur as a series of closed anticlines aligned along the main axis of the Rock Springs Uplift. Faults cross many of the anticlines and commonly contribute to the formation of traps in the reservoir sands. Some of the fields on the flanks of the uplift are formed by stratigraphic traps. All the fields on the uplift are gas fields. Production is primarily from the Frontier Formation and, to a lesser extent, from the Dakota and other Cretaceous and Jurassic formations.

Most fields in the Washakie and Great Divide Basins produce from stratigraphic traps, although a few local structural traps are present. Production comes predominantly from Cretaceous age sediments, with a handful of fields producing from older sediments.

Table 3-11 shows areas of high, moderate, and low oil and gas development potential for each special management area. The number of wells drilled in these areas and their present status are shown in the Table 3-12.

### Production History

Hydrocarbons have been produced within the resource area since the 1920s. An analysis of past drilling activity Figure 13, helps indicate how the resource has come to its present state of development. Easily mapped surface structures on the Rock Springs Uplift were located and drilled through the 1940s. These structures were gas prone and gas resources were of minor interest in the country, so few wells were drilled. Industry was concentrating its resources in areas of the United States that were oil prone.

During the late 1950s, activity began to increase, due mainly to improvements in exploration technology (e.g., gravity, magnetic, and seismic surveys) (Appendix 7-3, Oil and Gas Operations). These methods are useful for locating buried structures. Some of these structures were oil prone to the east of the Rock Springs Uplift and their discovery set off a drilling boom through the 1960s. The 1970s and 1980s have seen a drop and levelling off

TABLE 3-11

### OIL AND GAS DEVELOPMENT POTENTIAL IN SPECIAL MANAGEMENT AREAS (acres)

	High	Moderate	Low
Candidate Plant Species Sites	2,700	0	430
Candidate Plant Species Potential Habitat	4,520	16,790	19,010
Cedar Canyon ACEC	2,540	0	0
Currant Creek/Sage Creek	6,600	35,270	35,050
Greater Sand Dunes ACEC	34,290	4,710	0
Monument Valley	64,300	0	0
Natural Corrals ACEC	1,270	0	0
Oregon Buttes ACEC	0	0	3,450
Pine Springs ACEC & Expansion Area	0	0	6,030
Red Creek ACEC	20,810	12,230	26,440
Red Desert Watershed Area (large)	559,388	0	86,060
Red Desert Watershed Area (modified)	261,550	0	82,090
South Pass Historic Landscape (large)	0	0	90,670
South Pass Historic Landscape (modified)	0	0	54,840
Steamboat Mountain	43,950	0	0
Tri-State Monument (includes Red Creek)	103,490	57,590	180,226
White Mountain Petroglyphs ACEC	0	20	0

## AFFECTED ENVIRONMENT

TABLE 3-12

## OIL AND GAS WELLS DRILLED IN SPECIAL MANAGEMENT AREAS

	Producing Gas Wells	Producing Oil Wells	Abandoned Producing Wells	Suspended Wells	Plugged and Abandoned Wells
Candidate Plant Locations	0	0	0	0	0
Cedar Canyon ACEC	9	0	0	0	7
Currant Creek	0	0	0	0	2
Greater Sand Dunes ACEC	18	0	6	0	8
Monument Valley	4	0	0	0	6
Natural Corrales ACEC	0	0	0	0	0
Oregon Buttes ACEC	0	0	0	0	0
Pine Springs ACEC	0	0	0	0	0
Pine Springs Expansion	0	0	0	0	1
Red Creek ACEC	0	0	0	0	9
Red Desert Watershed Area	58	31	39	2	173
Red Desert (Modified)	4	0	8	0	60
Sage Creek	0	0	0	0	0
South Pass Historic Landscape	0	0	0	0	8
South Pass Historic Landscape (Modified)	0	0	0	0	6
Steamboat Mountain	1	0	2	0	12
Tri-State Monument	3	0	3	0	47
White Mountain Petroglyphs ACEC	0	0	0	0	0

in the number of oil wells drilled. Much of the oil at relative shallow depths has been discovered. Some oil discoveries are being made, but the majority of oil wells drilled are infill development wells in previously discovered oil fields.

Over the past 40 years, the number of gas wells drilled has increased over each 10-year period (Figure 13). These drilling increases are due to improvements in technology, the recognition of the importance of stratigraphic traps that contain much of the resource area's gas, deeper drilling targets which favor gas over oil, and the improvement in prices paid for gas. During the 1980s, more than four times as many gas wells were drilled as oil wells, indicating the increased importance of this resource. Drilling activity declined about 15 percent during the 1980s as a result of the rapid decline in oil prices beginning in 1983. This drilling decline was not as great as in most parts of the United States. Finding costs in the region have been low enough to continue to encourage drilling.

The number of plugged and abandoned wells declined 50 percent during the 1980s from the 1970s. This has been due to the industry concentrating on development drilling and drilling the lower risk exploratory projects, a reasonable business method to pursue during this period.

A review of drilling records indicates the number of wells completed in each producing formation (Figure 14). Gas wells usually produce from the Frontier (38.47 percent) and Dakota (21.97 percent) Formations or the Mesaverde Group (18.60 percent). The youngest gas producing formations are of Tertiary age and the oldest formation is the Big Horn Dolomite. Oil wells are most often completed in a formation of the Mesaverde Group (64.88 percent) or the Tertiary (13.32 percent). Oil wells produce from the same formations as do gas wells, with the exception of Mowry Shale and the Big Horn Dolomite.

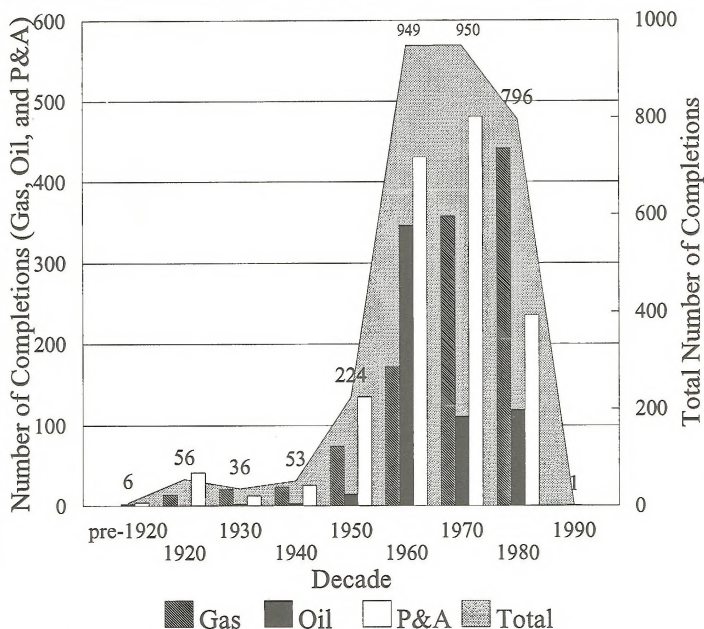
Oil wells produce from formations that are predominately buried to shallower depths than formations that produce gas. About 86 percent of all oil wells produce from Mesaverde Group and younger rocks, while about 67 percent of all gas wells produce from rocks that are older and generally more deeply buried. Figure 14 shows more clearly that oil wells tend to produce from shallower depths. About 82 percent of all oil wells produce from depths of less than 7,000 feet, while about 68 percent of all gas wells produce from greater depths.

Wyoming Oil and Gas Conservation Commission statistics for 1989, were used to obtain production figures for all producing fields within the resource area



# GREEN RIVER RESOURCE AREA WELL COMPLETIONS BY STATUS (Based on Wells Completed between 1900 -1990)

Decade	Total		Gas		Oil		P&A	
	Completions	Frequency	Completions	Frequency	Completions	Frequency	Completions	Frequency
pre-1920	6	0.20%	0	0.00%	2	0.33%	4	0.29%
1920	56	1.82%	14	1.27%	0	0.00%	42	3.07%
1930	36	1.17%	21	1.90%	2	0.33%	13	0.95%
1940	53	1.73%	24	2.17%	3	0.50%	26	1.90%
1950	224	7.29%	74	6.70%	15	2.50%	135	9.87%
1960	949	30.90%	172	15.58%	346	57.76%	431	31.51%
1970	950	30.93%	358	32.43%	111	18.53%	481	35.16%
1980	796	25.92%	441	39.95%	119	19.87%	236	17.25%
1990	1	0.03%	0	0.00%	1	0.17%	0	0.00%
Total:	3,071		1,104		599		1,368	
% of Total:	100%		36%		20%		45%	



Source: PI Historical Well Data



## AFFECTED ENVIRONMENT

(Appendix 7-5, Production Figures for Oil and Gas Fields and Units). About 111 fields have produced oil and/or gas within or partially within the resource area. Cumulative production has been more than 3 trillion cubic feet of gas and almost 170 million barrels of oil.

### Pipelines and Natural Gas Storage

An extensive natural gas transmission system now exists in Wyoming and the Rocky Mountain region. The state has over 12 major natural gas pipelines and 14 natural gas storage facilities. In addition, seven major pipelines are regulated by the Federal Energy Regulatory Commission and transport natural gas from the region in all directions in the interstate system. The Kern River pipeline is being constructed to transport gas from southwestern Wyoming to California. The competition for Wyoming gas will increase when this project is constructed. This system is designed to flow 700 million cubic feet per day, with a portion of the flow coming from Canada.

The basins of Wyoming and adjacent areas contain nearly 25 percent of the nation's natural gas reserves (excluding Alaska) but at present contribute only about 6 percent of the production, principally due to capacity constraints and distances to the markets.

The pipeline facilities, like the railroads, are constrained by the mountainous topography of the west. These topographical controls have created three east-west natural gas pipeline corridors across the continent. The central pipeline system extends from the Wyoming Overthrust Belt, through the resource area, and to the Great Lakes and eastern states.

Most gas is sold by producers directly to local gas distribution companies, with the pipeline acting as a "common carrier" of natural gas. Some pipelines have their own contracts with producers and the end user.

Storage facilities have been used by utilities and pipelines to administrate peak loads of gas and other sudden changes in forecasted consumption and production. At these facilities, gas is stored underground until needed. The Brady Field is the only gas storage facility located in the resource area. At the Brady Field, gas is injected into the Tensleep Formation via eight injection wells.

### Coal

The Green River Coal Region covers all of Sweetwater County and most of the resource area (Glass 1981).

Coal was first described in 1852 and the growth of the coal mines came about in 1868, with the recently completed Union Pacific Railroad (LeBar 1980). The minable coal-bearing deposits are centered around the Rock Springs Uplift (Map 18).

The coal-bearing Cretaceous and Tertiary rocks in the resource area were deposited adjacent to a shallow sea, in swamps and bogs, accumulating peat, for later transformation to coal. From the time of late Cretaceous to late Tertiary, this area underwent periodic deformation and uplifting. Coal-bearing beds are now tilted against the Rock Springs Uplift. Mining methods used are discussed in Appendix 7-7.

### Activity

Three open pit mines and two underground mines that are active in the resource area (Map 63). The coal is used to supply local industry and power plant needs, and is shipped to other eastern and western markets. Environmentally, these low sulfur coals are important locally and in the eastern markets; however, projections for demand and supply of southwestern Wyoming coal is dependent upon world oil prices, transportation costs, availability of alternate fuels, and changes in Federal laws and regulations. New low emission regulations are creating higher demands for Wyoming coals. In 1989, these mines produced 12 million tons of coal, almost equalling past production highs.

Coal mined from the open pit surface Bridger coal mine averages 9,400 BTU, 9.50 percent ash, and 0.59 percent sulfur. In 1991, Bridger produced 6.0 million tons of coal.

Coal mined from the open pit surface Black Butte mine, which includes Pit 22, averages 9,500 BTU, 9 percent ash, and 0.50 percent sulfur. Annual production is 5.8 million tons of coal.

Coal mined from the Lion Coal Company underground mine averages 11,300 BTU, 6.1 percent ash, and 1.2 percent sulfur. The company mines an average of 110,000 tons of coal annually.

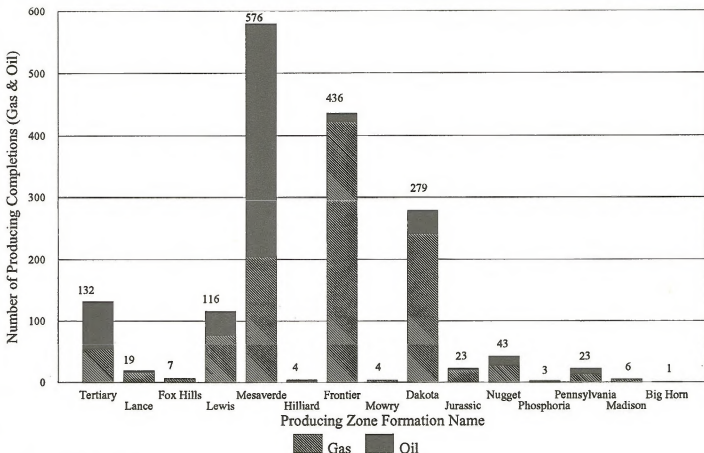
Coal mined from the Pilot Butte mine (formerly the Stansbury mine) averages 11,000 BTU, 6.6 percent ash, and 0.83 percent sulfur. Ark Land Company mines approximately 190,000 tons annually.

# GREEN RIVER RESOURCE AREA

## WELL COMPLETIONS BY PRODUCING FORMATION

(Based on Wells Completed between 1900 - 1990)

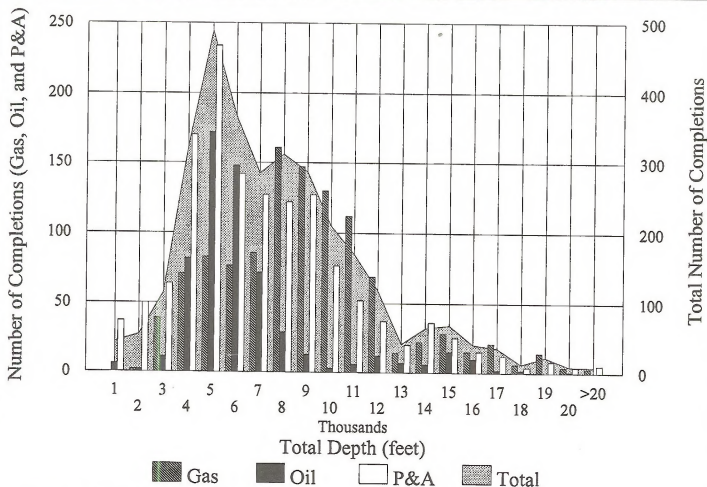
Producing Zone	Total		Gas		Oil	
	Completions	Frequency	Completions	Frequency	Completions	Frequency
Tertiary	132	7.88%	55	5.01%	77	13.32%
Lance	19	1.13%	16	1.46%	3	0.52%
Fox Hills	7	0.42%	5	0.55%	1	0.17%
Lewis	116	6.93%	77	7.02%	39	6.75%
Mesaverde	579	34.57%	204	18.60%	375	64.88%
Hilliard	4	0.24%	2	0.18%	2	0.35%
Frontier	436	26.03%	422	38.47%	14	2.42%
Mowry	4	0.24%	4	0.36%	0	0.00%
Dakota	279	16.66%	241	21.97%	39	6.57%
Jurassic	23	1.37%	20	1.82%	3	0.52%
Nugget	43	2.57%	28	2.55%	15	2.60%
Phosphoria	4	0.18%	2	0.18%	1	0.17%
Pennsylvania	23	1.37%	14	1.28%	9	1.56%
Madison	6	0.36%	5	0.46%	4	0.17%
Big Horn	1	0.06%	1	0.09%	0	0.00%
<b>Total:</b>	<b>1,675</b>		<b>1,097</b>		<b>578</b>	
<b>% of Total:</b>	<b>100%</b>		<b>65%</b>		<b>35%</b>	



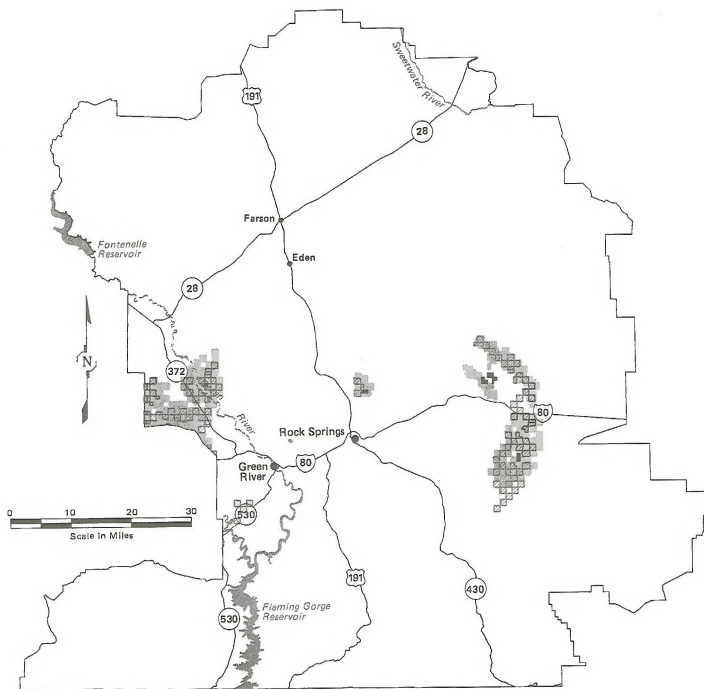
Source: PI Historical Data

# GREEN RIVER RESOURCE AREA WELL COMPLETIONS BY DEPTH (Based on Wells Completed between 1900 -1990)

TD (ft)	Total		Gas		Oil		P&A	
	Completions	Frequency	Completions	Frequency	Completions	Frequency	Completions	Frequency
1,000	43	1.40%	0	0.00%	6	1.00%	37	2.70%
2,000	54	1.76%	2	0.18%	2	0.33%	50	3.65%
3,000	114	3.71%	39	3.53%	11	1.84%	64	4.68%
4,000	323	10.52%	71	6.43%	82	13.68%	170	12.43%
5,000	469	15.92%	83	7.52%	172	28.71%	234	17.11%
6,000	367	11.95%	77	6.97%	148	24.71%	142	10.38%
7,000	285	9.28%	88	7.79%	72	12.02%	127	9.28%
8,000	312	10.16%	161	14.58%	29	4.84%	122	8.92%
9,000	287	9.35%	147	13.32%	13	2.17%	127	9.28%
10,000	210	6.84%	130	11.78%	3	0.50%	77	5.63%
11,000	170	5.54%	112	10.14%	6	1.00%	52	3.80%
12,000	118	3.84%	69	6.25%	12	2.00%	37	2.70%
13,000	41	1.36%	14	1.27%	7	1.17%	20	1.46%
14,000	64	2.08%	22	1.99%	6	1.00%	36	2.63%
15,000	68	2.21%	23	2.54%	15	2.50%	20	1.83%
16,000	40	1.30%	15	1.85%	15	1.67%	15	1.10%
17,000	35	1.14%	21	1.90%	2	0.33%	12	0.88%
18,000	12	0.33%	6	2.54%	2	0.33%	4	0.29%
19,000	22	0.72%	14	1.27%	0	0.00%	4	0.58%
20,000	6	0.26%	4	0.36%	7	1.17%	4	0.29%
> 20,000	2	0.26%	6	0.27%	0	0.00%	5	0.37%
Total:	3,071		1,104		599		1,368	
% of Total:	100%		36%		20%		45%	



Source: PI Historical Well Data



-  Permit Area
-  Mine Site
-  Lease Area

Map 63  
**Existing Coal/Sodium  
 Mines, Permit, Lease Areas**  
 Green River Planning Area



## AFFECTED ENVIRONMENT

### Coal Development Potential

Potential for Occurrence identifies areas containing formations known to be coal-bearing, that are not or have not been under lease, license, application, or expression of interest within the last 10 years. Potential for Development identifies areas containing formations known to be coal-bearing and are or have been under a lease, license, application, or expression of interest within the last ten years. Development potential will predominately be within the area centered around the Rock Springs uplift (Map 18).

Areas with high coal interest and development potential are the Beans Spring/PIO, Deadman Wash (formerly the Leucite Hills Tract), and the Cooper Ridge areas. These areas will be given consideration for new competitive federal coal leasing under the new Federal Coal Management Program (Appendix 3-2).

Coal exploration procedures and exploration license requirements are reviewed in Appendix 7-8. Coal is leased by application procedures outlined in Appendix 7-9.

The Deadman Wash tract is located approximately 30 miles northeast of Rock Springs and is presently under an exploration permit to Bridger Coal Company and Arch Minerals. Mining considerations made for this tract are based on two coal seams in the lower Fort Union Formation, and seven coal seams in the Lance Formation. Coal beds outcrop in a northwest-southeast trend, dip to the northeast at 2 to 6 degrees, and are broken by four east-west faults, making mining and pit delineation difficult. The expected recovery factor is 90 percent with a maximum economic stripping ratio of 8:1 and a maximum mining depth of less than 200 feet for seams ranging from 3 feet to 15 feet.

Coal within the Deadman Wash tract averages 9,200 British Thermal Units per pound; contains an average of 8.0 percent ash and 0.65 percent sulfur. This is considered a low sulfur coal of approximately 20 million recoverable tons; thus, it is a highly marketable coal to meet new federal air quality regulations. Two mining operations are active in the area, the Bridger Mine located to the east, and the Black Butte Pit 22 Mine located south of the tract. Both mines supply coal to the Bridger Power Plant and to other local and interstate coal markets.

### Preference Right Lease Applications

There are four preference right lease applications (Beans Spring area) in the southern part of the coal development potential area. A preference right lease is

one issued by right due to a discovery of coal in commercial quantities instead of by competitive bidding. These lease applications were filed as prospecting permits in 1970 and with the extensions allowed, the permittee had until 1974 to show commercial discovery of coal. Prior to the permittee submitting their final showing, a moratorium was imposed by the Secretary of the Interior on processing and adjudication of preference right leases. After legal action was initiated by several environmental groups under the Natural Resource Defense Council, regulations were promulgated defining "commercial quantities." Subsequent to this settlement the environmental groups re-opened the case challenging the adequacy of environmental documents prepared. A settlement was reached in 1987, and the Department of Interior promulgated regulations incorporating the terms of the agreement.

At the present time, the Bureau is working with the permittee to incorporate additional environmental analysis into the final showing. This analysis will address the change of transportation from rail to truck and all associated impacts.

### Sodium/Trona

Discovery of sodium in the raw material trona came in 1939 from a wildcat oil well. Union Pacific later drilled four test holes which lead to an agreement with Westvaco Chlorine Products Company to develop a pilot plant and mine to produce soda ash. Processing problems were soon solved and by 1954, plant capacity was 500,000 tons. Since 1954, four other underground mines and facilities have come on line, with generally increasing production to an all time high of 8.42 million federal tons in 1988. Mining methods are discussed in Appendix 7-7.

After Wasatch Formation sediments partially filled the basin, Lake Gosiute formed on the low, flat surface, existing for approximately 4 million years. The persistence of the basin during the lake's existence led to the deposition of a thick section of lake sediments, collectively termed the Green River Formation. Trona is found in abundance within the Wilkins Peak Member (Figure 11) of the Green River Formation.

At one point during deposition of the Wilkins Peak Member, Lake Gosiute shrank greatly in size and had no outlet, causing the alkalinity of the lake to increase. The resultant sediments were saline and characterized by thick beds of trona or trona-halite and numerous other rare minerals (Bradley and Eugster 1969) interspersed with thin beds of oil shale, marlstone, claystone, trona or trona-halite, limestone, and tuff. It has a maximum

## AFFECTED ENVIRONMENT

thickness of about 1,300 feet in the southeastern part of the basin, thinning toward the margins. More than 40 trona and trona-halite beds have been recognized, with 25 of these beds exceeding 4 feet in thickness and most covering more than 100 square miles in areal extent.

### Resource Potential

Presently there are five active companies mining trona, one company that processes sodium products only, and several companies and individuals that hold undeveloped sodium leases within the Basin. Only Rhone-Poulenc (Stauffer), Texasgulf, FMC, and General Chemical's mining operations are within the resource area. In 1989, 6.6 million tons of trona ore was mined to produce 3.67 million tons of soda ash, which is sold worldwide. Map 63 shows mine sites and permit areas within the resource area. Map 18 shows the Known Sodium Leasing Area and areas of sodium development potential.

In the Eden-Farson area, black trona water, consisting of organic acids dissolved in a sodium carbonate solution, occurs within the Wilkins Peak Member (Map 18). Sodium from the "black water" is potentially economic to recover.

### Sodium Development Potential

The most likely area for any future sodium leasing is within and around the Known Sodium Leasing Area and near the Eden-Farson area for black trona water. These brines have not been developed in the past, but the resource area presently has six prospecting permit applications to explore these brine deposits. There are also four prospecting permit applications to explore for trona along the eastern edge of the Known Sodium Leasing Area. Methods of obtaining a Prospecting Permit and Exploration License are discussed in Appendix 7-8. Sodium is leased by procedures outlined in Appendix 7-9.

### Oil Shale

Oil shale areas of interest in southwestern Wyoming lie within the Green River and Washakie Basins. These areas are presently withdrawn from locatable mineral entry to protect the oil shale resource. Although the oil shales within these basins are of lesser quality than Colorado oil shales, they are nevertheless as important; some of these oil shale beds contain several million barrels of oil per square mile (Trudell, et al. 1973).

Oil shales occur in the three members of the Green River Formation (Figure 11) and are attributed to the existence of Lake Gosiute. Three major depositional cycles are recorded during its existence. The first stage lasted about one million years and represented a fresh water environment in which the Tipton Shale Member was deposited. This shale represents the largest and richest deposit of oil shale in southwest Wyoming and is located in the deepest portion of the basin, west and southwest of Rock Springs, Wyoming (Clayton and Best 1981).

The second stage represented a closed-lake condition due to a more arid climate. The Wilkins Peak Member represents a saline environment in which many beds of trona and halite were deposited with thin lenses of oil shale. These thin lenses represent higher rainfall periods. During the final stage of Lake Gosiute, the lake expanded and again became a fresh water lake, depositing the Laney Shale Member. The oil shale deposits of the Laney are the richest in the Washakie Basin and are the result of lake deposition shifting from the Green River Basin into the Washakie Basin (Roehler 1965).

### Resource Potential

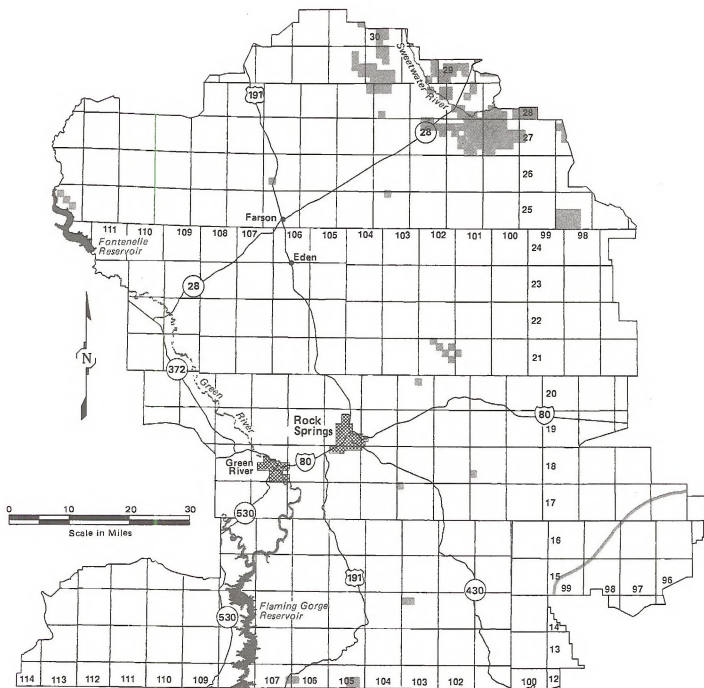
The Green River and Washakie Basins contain approximately 300 billion barrels of oil shale. Of this, about 30 million barrels are considered to be high grade, yielding between 25 to 65 gallons of oil per ton. These oil shales have not been leased nor received major attention from industry, primarily due to high development costs of underground and strip mining methods. However, numerous in-situ research projects have been conducted over the years and have provided positive results for future extraction of this mineral resource.

No oil shale leasing regulations are in force. The Big Sandy/Salt Wells MFP recommends revocation of the oil shale withdrawal(s); this recommendation is still under consideration.

### Locatable Minerals

Uranium is the only locatable mineral known to have been mined commercially in the resource area, and that was short lived. Mining claims have been located throughout the resource area (Map 64) for a variety of minerals locatable under the 1872 mining law, but no major commercial operation has been initiated. All lands with mineral entry rights are open to mining claim location unless the lands have been withdrawn to locatable mineral entry.





 Mining Claim

Map 64  
**Locatable Mineral Development  
 Potential Areas**  
 Green River Planning Area

## AFFECTED ENVIRONMENT

### Resource Potential

Known types of mining claims, include claims for gold, jade, building stone, pumice, uranium, beryllium, barium and strontium; however, a mining claimant is not required to identify the mineral(s) that are being prospected at the time of location. None of these claims are now under production. Minerals identified in the planning area but not necessarily in commercial quantities are zeolite, gold, uranium, jade, building stone, pumice, barium/strontium, and titanium.

Large deposits of zeolite occur in the Bridger Formation within the Washakie Basin. These deposits are located within an oil shale withdrawal and are not subject to location under the mining laws until the withdrawal is lifted.

Gold claims are located in the pre-Cambrian rock along the Wind River Front, and in deposits in the Tertiary rocks near South Pass. Exploration has occurred in these formations, but no production has occurred.

A large number of uranium claims have been staked, and prospecting has occurred within the Ericson and Blair Formations on the Rock Springs Uplift. Commercial operations were never started, and the claims have been allowed to expire for the lack of assessment work. Uranium was commercially mined in the northeastern part of the resource area, for a short period of time.

Jade has been found in the pre-Cambrian rocks near the northern boundary of the planning area, but no claims are currently under development.

One building stone claim exists and is currently under contest by the BLM in the Natural Corral withdrawal.

Seven placer claims have been located for pumice in the area of Zirkel Mesa. Although plans and notices have been received by the BLM concerning these claims during the last several years, no commercial production is known to have occurred off of these claims.

A small number of barium/strontium claims have been located on Aspen Mountain, but no development has occurred and their potential is unknown.

Small deposits of titanium-bearing sands exist in the general area of Red Creek, Salt Wells Creek, and Black Butte. These deposits are not economic because the titanium is not extractable with present technology.

### Salable Minerals

Salable minerals include sand, gravel, topsoil, boulders, riprap, mossrock, flagstone, volcanic rock, granite, sandstone, shale, limestone, and barrow material. Sand, gravel, and fill material have long been used on roads, highways, and construction projects. It is and has been used by the Wyoming Highway Department in highway construction, by other Federal, State, and local agencies, and by private contractors and homeowners. Mineral materials are disposed of to public agencies under a Free Use Permit with disposals to the Federal Highway Administration for federally aided highways done under a Title 23 appropriation. Other types of disposals are sales of sand, gravel, mossrock, and flagstone. In general, it is Bureau policy to facilitate mineral material disposals in cases where it would promote better public road systems, oil and gas roads, other public projects, and private uses.

### Resource Potential

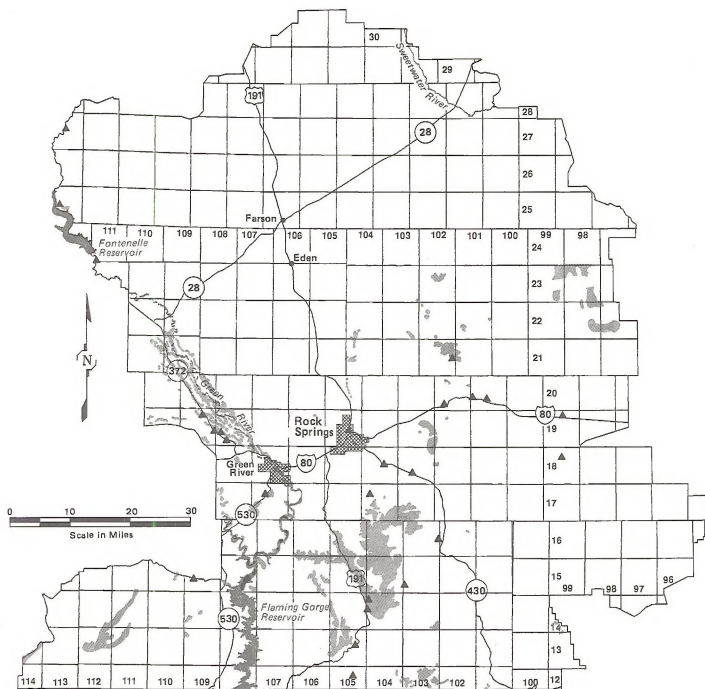
Areas with sand and gravel potential are shown on Map 65. Most of the major gravel deposits in the planning area occur in or near the Green River and Blacks Fork, or at outcrops of the Bishop Conglomerate. Other small deposits of gravel occur scattered across the planning area. The areas of greatest potential development are the area near the Green River, Zirkel Mesa (for hard volcanic rock), and outcrops of the Bishop Conglomerate.

### Geologic Hazards

Several types of geologic hazards are present in the planning area. Hydrogen sulfide, earthquake, and landslide hazards are of primary concern, but locally wind-blown deposits, subsidence, and volcanic hazards exist. Geo/Resource Consultants (1984) prepared an analysis of these hazards, with the exception of the hydrogen sulfide hazard.

Active faults, hydrogen sulfide producing wells, landslides, and windblown sands are shown on Map 59. Hydrogen sulfide is present in some deep producing oil and gas wells and is with the hydrocarbons. Exposure to small quantities can cause death. Additional discussion of this hazard occurs in Chapter 4 and a risk analysis of exposure is presented in Appendix 7-6.

Active faulting is limited to the perimeter of the planning area and historical seismicity shows no major earthquakes within the planning area. However, earthquakes in the adjacent region may directly affect this area.



- Sand and Gravel Potential
- Sand and Gravel Site

Map 65  
**Sand and Gravel**  
 Green River Planning Area

## AFFECTED ENVIRONMENT

Landslides are relatively scarce in the planning area, due to the relatively arid climatic conditions and the competent rocks underlying most steep slopes. Some unstable slopes are located in the south, in poorly consolidated glacial deposits and on steeper margins of gravel-capped buttes and mesas such as Little Mountain.

Windblown sand deposits occur throughout the central part of the planning area. The Killpecker dune field encompasses about 170 square miles, extending beyond the planning area boundary. Prevailing wind direction is from the west-northwest and dune migration follows prevailing winds. Hazards are increased when dunes are migrating.

Subsidence may result from past underground coal mining activity, in local areas. Cone-shaped depressions typically form directly over mined-out areas. Land use planning can result in effectively minimizing this hazard.

Volcanic hazards are limited to the area around existing volcanic deposits in the Leucite Hills and Boar's Tusk. These deposits have been dated at about 1.25 million years and are still potentially active.

## Paleontology

The planning area is located in an area well known for its abundance of scientifically significant fossils, most especially for Eocene vertebrate fossils. No dinosaur fossils have been found within the modern boundaries of the planning area since Edward Drinker Cope found portions of an *Agathaumas sylvestris* in the Lance Formation somewhere near Black Butte Stage Station in 1873. But museums all over the world have specimens from the Eocene-age formations found here: abundant and well-preserved petrified fish; fossil wading birds; amphibians; reptiles (such as fossil turtles and crocodiles); and fossils of Eocene-age mammals such as titanotheres, early horses, and even early primate fossils.

## Pre-Cambrian Formations

The pre-Cambrian age formations are not known to contain fossils of any kind. They are composed of dense, granitic and metamorphic rocks with little chance for fossil preservation.

## Cretaceous-Age Formations

Formations deposited during the Cretaceous age only outcrop on the Rock Springs Uplift. The fossils

found in these formations are mostly invertebrate fossils such as clams, ammonites, and snails. The coal beds of the Rock Springs Formation (and their associated plant fossils) were also deposited during this time. Vertebrate fossils are only occasionally found.

## Tertiary-Age Formations

**Fort Union Formation** Fossils from the Fort Union Formation include: 1) plant fossils (leaf imprints and petrified wood); 2) invertebrate fossils (e.g., freshwater clams and snails) that are indicative of streams and ponds; and 3) rare vertebrate fossils (e.g., fish, turtles, crocodiles, and mammals).

## Wasatch Formation

This formation outcrops over a large part of the Great Divide Basin, and can be found around the outer margins of the Green River and Washakie Basins. Fossils include snails, ostracodes, fish, turtle, crocodile, and mammals. Of these, it is the mammal fossils that have attracted the most attention by researchers. Vertebrate fossils in the Wasatch, while not frequent, seem to be more common than in the Fort Union. Many mammal fossils found in the Wasatch Formation in southwestern Wyoming have been described and published, including early grazing animals, titanotheres, and primates (Gazin 1952; Carlson 1989).

## Green River Formation

This formation is exposed in parts of the Great Divide Basin, and in a broad band around the margins of the Green River and Washakie Basins. Freshwater snails and clams are common within certain layers of the formation, known for its large number of beds of excellently preserved fish fossils. Fossils of wood, leaf imprints, stromatolites, insects, crocodiles, frogs, turtles, mammals, and birds have also been described and published (Grande 1980).

## Bridger Formation

This formation generally occupies the center of the Green River Basin, forming many of the badland areas. It is so rich in mammal fossils that Gazin (1976) lists over 200 separate references discussing and describing mammal fossils that can be found in the Bridger. Turtle fossils, freshwater mollusks, and ostracodes are also common in the Bridger, and occasionally, fossil leaves, fish, crocodiles, and birds are found. In the Washakie Basin, the Bridger forms the badland area east of Kinney Rim to Adobe Town and contains large amounts of fossil mammals (Turnbull 1978).

## AFFECTED ENVIRONMENT

### Bishop Conglomerate

The Bishop (capping several of the so-called "mountains" in the southern half of the planning area) has little potential for the occurrence of fossils.

### Quaternary-Age Deposits

These deposits contain some *Bison antiquus* localities.

## OFF-ROAD VEHICLES

The planning area currently uses two off-road vehicle (ORV) designation plans that were developed for the Big Sandy and Salt Wells Resource Areas (Map35). The designations have been instituted for resource protection of soils, vegetation, wilderness, wildlife, and water. The Sand Dunes ORV play area is the only area in the planning area that carries an open ORV designation; all other areas are either closed or limited with various restrictions.

Off-road vehicles are many and varied; the four-wheel drive is the most common. The majority of these vehicles are "stock" pickups which are used on and off-highway. Much of the off-highway use of these vehicles is not recreation related. Local ranchers use them extensively in their operations; oil companies, surveyors, and seismograph companies also make heavy use of these vehicles. Firewood gathering is another use which greatly adds to off-road travel. Four-wheel drive use by hunters is the biggest ORV impact in the planning area. Recreational use of these vehicles in the planning area is estimated at 6,170 visitor days per year.

Other ORVs which are commonly used in the planning area include snowmobiles, motorcycles, jeeps, all-terrain vehicles, dune buggies, and mountain bikes.

Snowmobile use is on the increase, especially in the Wind River Front Area. This is the only area of sufficient snow depth to encourage snowmobile use. Snowmobile season runs from December to March and is not solely a recreational endeavor as many ranchers, resort owners, and summer residence owners use snowmobiles to perform chores and access their property. Snowmobiles cause very little resource damage unless they are misused to run wintering wildlife.

The Continental Divide Snowmobile Trail runs for about 8 miles on the planning area across the northern boundary near the Bridger-Teton Forest. Other snowmobile use occurs on unplowed roads or cross country. There is one organized snowmobile club in Rock Springs

that has "adopted" a portion of this trail. Most snowmobile use comes from Rocks Springs, Pinedale, Lander, and Green River.

Mountain bikes and their use are becoming more popular. Hundreds of miles of dirt, gravel, and two-track roads are available for riding. Dune buggies, sand dragsters, and motorcycles are free to explore the entire 10,390-acre Greater Sand Dunes ORV play area. Visitation to this area runs around 3,620 ORV visits per year.

## RECREATION

The types of recreation activities available on BLM-administered lands in the planning area are many and varied. A brief listing includes stream and river fishing; big game hunting for elk, deer, antelope, and bear; small game hunting for grouse and waterfowl; river rafting and canoeing; swimming; camping; backpacking; horsepacking and riding; cross-country skiing; snowmobiling; dirt bike and other ORV use (dune buggies, etc.); mountain biking; rock and petrified wood collecting; sight seeing of historic trails and places; wild horse viewing, and wildlife viewing and general photography. The season of use for the planning area is year round; there are recreation activities for any season of the year.

The recreation resources of the planning area occur in a mostly dispersed manner. The major recreational boundaries of the planning area include Flaming Gorge National Recreation Area, the Green River, and the Wind River Front. The major recreation locations include the Greater Sand Dunes Area, the Oregon Buttes, 14-Mile recreation site, the Oregon Trail and its variant routes, Three Patches Picnic Area, and Little and Pine Mountains.

Public lands within the planning area provide about 82 percent of the elk hunting, 64 percent of the deer hunting, 75 percent of the antelope hunting, 65 to 70 percent of the sage grouse hunting, 15 percent of the moose hunting, and 35 percent of the camping.

There are two Special Recreation Management Areas (SRMA) in the planning area: 1) Greater Sand Dunes (41,640 acres) (refer to Greater Sand Dunes ACEC) and 2) the Oregon Mormon Pioneer National Historic Trails (315 miles). Both areas receive the bulk of the planning area's recreation use. A complete discussion of the Greater Sand Dunes area can be found in the Special Management Area descriptions. A complete discussion of the Oregon Mormon Pioneer National Historic Trails special recreation management area (SRMA) can be found in the Oregon Mormon



## AFFECTED ENVIRONMENT

Pioneer National Historic Trails Management Plan (USDI 1986a and Cultural section). The plan can be found in any office of the Rock Springs, Rawlins, and Casper Districts. The SRMA is managed for intensive visitation from dedicated trail buffs in four-wheel drive vehicles to the transient visitor in a family vehicle simply passing through the area.

14-Mile and Three Patches recreation sites are developed sites. Plans are pending to develop the Sweetwater River Campground and guard station as well as expand the off-road vehicle parking/camping area in the Sand Dunes. The planning area also has 5 semi-developed sites, 8 sites that are managed by other entities, 18 undeveloped sites, and numerous popular use areas (Map 21). Complete information is on file in the Green River Resource Area office.

The five semi-developed sites are Sweetwater Bridge, South Pass Cross-Country Ski Trail, Blucher Creek, Tallrace Campground, and the Continental Divide Snowmobile Trail.

14-Mile Rest Area is located approximately 14 miles north of Rock Springs on Highway 191. The site is primarily a rest area along the highway and consists of 6 picnic tables and sun protection covers, a vault toilet, barbecue grills, trash cans, short hiking trail, and a small spring-fed lake or pond. The site is for day use only and no fee is charged. Hiking, fishing, and picnicking are the primary activities at the site.

Three Patches Campground and picnic area is located approximately 15 miles south of Rock Springs on Aspen Mountain. There are 7 camping and picnic sites, 2 restrooms, and an open play area. The site is used primarily for camping and picnicking and is handicapped accessible.

The Sweetwater Bridge Campground accommodates approximately eight sites; developments include a one-vehicle bridge over the Sweetwater River and one vault toilet. Activities at the site include camping, picnicking, hiking, rock scrambling, and fishing.

The South Pass Cross Country Ski Trail is located in the South Pass area and is a groomed cross country ski trail that is about 6 miles long. No other developments are present.

The Blucher Creek Campground is located near the Wind River Front. The area is still used by campers, hunters, fishermen, and snowmobilers, but as a dispersed undeveloped area.

The Tallrace Campground is located on the Green River below the Fontenelle Reservoir. The area is utilized for camping, fishing, and boat launching.

The Continental Divide Snowmobile Trail trailhead begins at the Rock Shop on South Pass and passes through adjacent forest lands into the bordering Pine-nale Resource Area. The trail is groomed, with minimal facilities. The only improvements on the trail are the bridge and the vault toilet at the Sweetwater Bridge Campground, and a pit toilet at the Blucher Creek Campground (Map 20).

The Continental Divide National Scenic Trail was established by Congress in 1978. The trail crosses about 153 miles of the planning area, including 108 miles of BLM-administered public land, 35 miles of private land, and 10 miles of state land. The Forest Service published a comprehensive management plan for the trail in late 1985. The plan set broad goals and policy for local trail management.

The trail route will generally follow the Continental Divide south from the Forest Service boundary to the Oregon Buttes. At this point, the Divide and trail will split with one segment generally following the Honeycomb Buttes WSA northern boundary to the Rock Springs/Rawlins District boundary. This is the route that has been identified for inclusion into the National Trail System. There are possibilities to establish an "unofficial" hiking trail that starts south to the Leucite Hills area and then heads southeast to the district boundary.

Approximately 1,500 visits occur annually on the Continental Divide National Scenic Trail. Every year a few hardy souls pass through the planning area, traversing the entire trail from Canada to Mexico, but most visitors are casual sightseers, hunters, or snowmobilers. Much of the trail traverses the checkerboard. Access through private and state lands would be necessary for Canada-to-Mexico trail trekkers.

The Green River begins above Fontenelle Reservoir and flows in a southerly direction through the Seeds-kadee National Wildlife Refuge and the Town of Green River into the Flaming Gorge Reservoir. Recreational activities include camping, hunting, river rescue training classes, rafting, canoeing (largest single recreational activity), wildlife viewing (especially in Seeds-kadee), fishing, picnicking at Weeping Rock and Slate Creek, historical tours (both by water and land), general unstructured recreation, sightseeing (e.g., walking, driving, floating), bicycling, and rockhounding. The Green Belt Task Force is working towards recreational improvements.



## AFFECTED ENVIRONMENT

The Big Sandy River flows into the planning area from the Bridger-Teton Forest boundary and continues westward until flowing into the Green River. The upper end of the Big Sandy, particularly where it joins the forest boundary, provides outstanding recreational, historic, and scenic values.

Numerous popular undeveloped sites are present in the planning area. They are generally small sites located along streams and rivers that receive moderate seasonal use. Facilities are not provided at any of these sites. Table 3-13 lists the sites, their location, and the predominate activity associated with the site.

**TABLE 3-13**  
**UNDEVELOPED RECREATION SITES IN THE GRRRA**

Site	Location	Activity(ies)
Sweetwater Guard Station	North of Sweetwater Bridge on the Wind River Front	Camping, hunting, fishing
Squaw Creek	Wind River Front	Camping, hunting, fishing
Pine Mountain	South of Rock Springs	Camping, hunting
Little Mountain	South of Rock Springs	Camping, hunting
Dutch Joe	Wind River Front	Camping, hunting, fishing
Natural Corrals	East of Rock Springs	Hiking, sightseeing
Green River	Running north to south on west side of RA	Camping, hunting, fishing, floating the river
Boar's Tusk	North of Rock Springs	Sightseeing
Pine Creek	Wind River Front	Camping, fishing
Big Sandy River	North of Rock Springs	Camping, fishing, some float-boating
Steamboat Mountain	North of Rock Springs	Wildlife viewing, hiking, camping
Chicken Springs	On Bush Rim	Hunting, camping, wildlife viewing
Cedar Canyon	North of Rock Springs	Hiking, cultural viewing
10-Mile Marsh	East of Rock Springs	Wildlife viewing
Firehole Basin	South of Rock Springs	Hiking, camping, mountain biking
Continental Divide National Scenic Trail	North and east of Rock Springs	Hiking, camping, wildlife viewing
East Fork Area	Wind River Front	Camping, hiking, fishing
White Mountain Petroglyphs	North of Rock Springs	Picnicking, cultural viewing

## AFFECTED ENVIRONMENT

Several other recreation sites are not managed by the BLM but are administered by other entities. These R&PP sites are on BLM-administered land but are managed under leases of the R&PP Act. They include the Stauffer Picnic Grounds, PP&L recreation site, Sweetwater Trap Club, an archery range, and a model airplane landing strip.

Visitor use in the planning area totaled 77,317 recreation use days. Table 3-14 shows all recreation visitor use in the planning area broken down by activity according to the 1990 Recreation Management Information System, and Wyoming Game and Fish Annual Harvest Reports.

**TABLE 3-14**  
**RECREATION USE DAYS**

Recreation Activity	Number of Participants <sup>1</sup>	Recreation Days <sup>1</sup>
ORV Travel	8,500	2,292
Other Motorized Travel	10,000	2,083
Non-Motorized Travel	8,000	3,208
Camping	5,000	4,208
Hunting	23,474	54,792
Land-Based Sports	7,900	1,375
Fishing	7,500	4,000
Boating	1,800	400
Other Water-Based Sports	1,500	1,542
Winter Sports	1,000	500
Snowmobiling	1,200	2,917
<b>Total</b>	<b>75,874</b>	<b>77,317</b>

<sup>1</sup> All numbers are based on BLM's Recreation Management Information System Report except hunting numbers which are based on Wyoming Game & Fish Annual Harvest Reports.

Special recreation permits are required for all commercial use, major competitive recreation events, and when necessary, to meet management objectives in special recreation management areas (43 CFR 8372).

Access to recreation areas is mostly through existing roads and trails including the Tri-Territory Loop, the Lander Road, Fort LaCiede Loop, the Firehole-Little Mountain Loop, and the Flaming Gorge Scenic Loop.

The demand for existing recreation facilities and recreation activities currently exceeds supply and demand is expected to increase in the future.

### Recreation Opportunity Spectrum

Public lands are managed to provide a broad spectrum of recreational opportunities in the planning area. The recreation opportunity spectrum system provides the BLM with a framework for determining existing outdoor recreation opportunities and management potential, based upon a combination activity, setting, and experience.

Use of the recreation opportunity spectrum provides establishment of outdoor recreation management goals and objectives for specific areas, provides analysis of the impact of proposed resource management actions on available recreation opportunities, provides for monitoring in terms of established standards for recreation experience and opportunities settings, and provides for specific management objectives and standards for project plans.

The recreation opportunity spectrum is divided into six management classes which are described in Table 3-15 and shown on Map 66. The recreation opportunity spectrum system describes probable physical settings, experiences, and activities for each class and identifies where these combinations occur within the planning area, but also allows flexibility. The use of this system on public lands will help better recognize and meet the public's growing demand for a wide variety of recreation activities and settings within the planning area.

# AFFECTED ENVIRONMENT

TABLE 3-15

## THE RECREATION OPPORTUNITY SPECTRUM CLASS DESCRIPTIONS

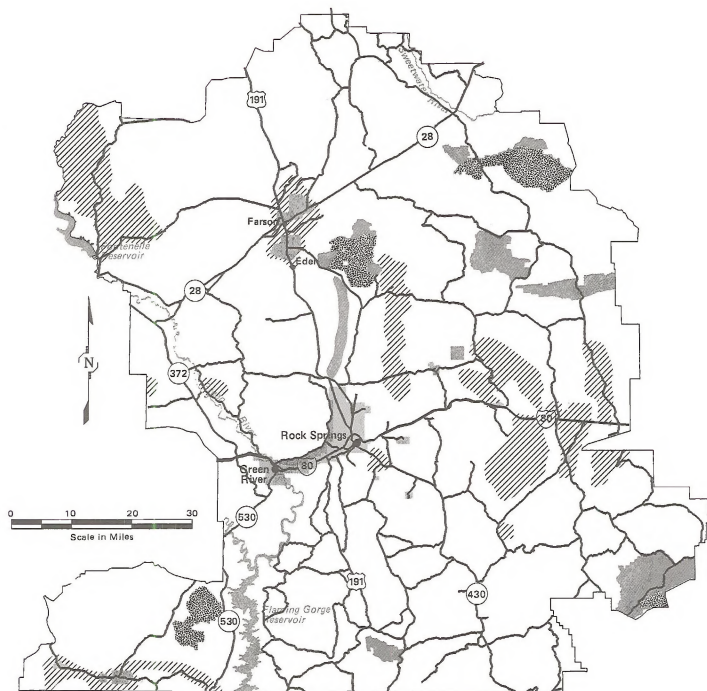
Opportunity Class	Experience Opportunity	Setting Opportunity	Activity Opportunity
Primitive	Opportunity for isolation from the sights and sounds of humans, to feel a part of the natural environment, to have a high degree of challenge and risk, and to use outdoor skills. Area is characterized by	essentially unmodified natural environment of fairly large size. Concentration of users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Only facilities essential for resource protection are used. No facilities for comfort or convenience of the user are provided. Spacing of groups is informal and dispersed to minimize contacts between groups. Motorized use within the area is not permitted. Camping, hiking, climbing, enjoying scenery or natural	features, nature study, photography, spelunking, hunting (big game, small game, upland birds, waterfowl), ski touring and snowshoeing, swimming, diving (skin and scuba), fishing, canoeing, sailing, and river running (non-motorized craft).
Semi-Primitive Nonmotorized	Some opportunity for isolation from the sights and sounds of humans, but not as important as for primitive opportunities. Opportunity to have high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills.	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low, but there is often evidence of other area users. On-site controls and restrictions may be present, but are subtle. Facilities are provided for the protection of resource values and the safety of users only. Spacing of groups may be formalized to disperse use and limit contacts between groups. Motorized use is not permitted.	Camping, hiking, climbing, enjoying scenery or natural features, nature study, photography, spelunking, hunting (big game, small game, upland birds, waterfowl), ski touring and snowshoeing, swimming, diving (skin and scuba), fishing, canoeing, sailing, and river running (non-motorized craft).
Semi-Primitive Motorized	Same opportunity for isolation from the sights and sounds of humans, but not as important as for primitive opportunities. Opportunity to have high degree of interaction with the natural environment, to have moderate challenge and risk, and to use outdoor skills. Explicit opportunity to use motorized equipment while in the area.	Area is characterized by a predominantly unmodified natural environment of moderate to large size. Concentration of users is low, but there is often evidence of other area users. On-site controls and restrictions may be present, but are subtle. Facilities are provided for the protection of resource values and safety of users only. Spacing of groups may be formalized to disperse use and limit contacts between groups. Motorized use is permitted.	Same as the above, plus the following: ORV use (4-WD, dune buggy, dirt bike, snowmobile, power boating).
Roaded Natural	About equal opportunities for affiliation with other user groups and for isolation from sights and sounds of humans. Opportunity to have a high degree of interaction with the natural environment. Challenges and risk opportunity are not very important except in specific challenging activities. Practice of outdoor skills may be	Area is characterized by a generally natural environment with moderate evidence of the sights and sounds of humans. Resource modification and utilization practices are evident, but harmonize with the natural environment. Concentration of users is low to moderate with facilities sometimes provided for group activity. On-site controls	All activities listed previously plus the following: picnicking, rock collecting, wood gathering, auto touring, downhill skiing, snowplay, ice skating, waterskiing and other water sports, hang gliding, interpretive use, rustic resorts, and organized camps.

# AFFECTED ENVIRONMENT

TABLE 3-15 (Continued)

## THE RECREATION OPPORTUNITY SPECTRUM CLASS DESCRIPTIONS

Opportunity Class	Experience Opportunity	Setting Opportunity	Activity Opportunity
Roaded Natural (Continued)	important. Opportunities for both motorized and nonmotorized recreation are present.	and restrictions offer a sense of security. Rustic facilities are provided for user convenience as well as for safety and resource protection. Conventional motorized use is provided for in construction standards and design of facilities.	
Rural	Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. These factors are generally more important than the natural setting. Opportunities for wildland challenges, risk taking, and testing of outdoor skills are unimportant, except in those activities involving challenge and risk.	Area is characterized by substantially modified natural environment. Resource modification and utilization practices are obvious. Sights and sounds of humans are readily evident, and the concentration of users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for specific activities. Developed sites, roads and trails, are designed for moderate to high use. Moderate densities are provided far away from developed sites. Facilities for intensive motorized use are available.	All activities listed previously plus the following competitive games, spectator sports, bicycling, jogging, outdoor concerts, and modern resorts.
Modern Urban	Opportunities to experience affiliation with individuals and groups are prevalent as is the convenience of sites and opportunities. Experiencing the natural environment, and the use of outdoor skills are largely unimportant.	Area is characterized by a highly modified environment, although the background may have natural elements. Vegetation is often exotic and manicured. Soil may be protected by surfacing. Sights and sounds of humans, on-site, predominate. Large numbers of users can be expected. Modern facilities are provided for the use and convenience of large numbers of people. Controls and restrictions are obvious and numerous. Facilities for high intensity motor use and parking are present with forms of mass transit often available.	All activities listed previously.



**Map 66**  
**Recreation**  
**Opportunity Spectrum**  
**Green River Planning Area**

## SOCIOECONOMICS

### Introduction

The Green River Resource Area includes portions of five counties: Sweetwater, Fremont, Sublette, Lincoln, and Uinta (Map67). All socioeconomic analysis is for the 5-county region of Sweetwater, Fremont, Sublette, Lincoln, and Uinta Counties. The largest communities in the Resource Area are Rock Springs and Green River. Other populated areas include Superior, Reliance, Eden-Farson, Jamestown-Rio-Vista, Point-of-Rocks, Table Rock, Bitter Creek, Burntfork, Lonetree, and McKinnon. Select socioeconomic tables are presented in Appendix 10. Other economic tables, graphs, and charts which were used for the analysis in the document are on file at the BLM Green River Resource Area in Rock Springs, Wyoming.

### Taxable Property Valuation

The property assessments used in this report are for 1987/1988. Annual assessed value of taxable property is based upon the property and production totals from the year prior to the year of the assessment. Minerals are assessed by the State at 100 percent of the market value of production. However, most real property is assessed at 25 percent of its 1967 market value which equaled about 8 percent of current market values in 1987 and 1988. Motor vehicles and private railroad cars reportedly are valued at their market/book value.

### Total Gross Valuation

The total gross valuation of taxable property in the region in 1988 was over \$2.2 billion, about 7 1/4 percent lower than in 1987. While the value of motor vehicles and private railroad cars increased, the average value of other taxable property declined.

### Other Taxable Property

Taxable property other than motor vehicles and private railroad cars account for the bulk of taxable valuation. This category includes minerals and utilities as well as other real and personal property. Other real property includes land and improvements, town lots and improvements, and commercial/industrial/other land and improvements. Personal property includes industrial plants and equipment, business and commercial property, and transportable homes.

## Taxes

The following discussion will cover three types of taxes which provide revenue to the 5-county region: taxes on assessed property values, sales taxes, and use taxes. Assessed property values have been discussed in the Taxable Property Valuation section. Sales taxes are based on the sales price of items sold within the state/counties.

The State use tax is imposed on purchases made outside a taxing jurisdiction for first use, storage, or other consumption within that jurisdiction. Thus, the use tax prevents a person from avoiding sales tax or paying a lower tax rate by making purchases outside of the taxing jurisdiction where first county use, storage, or consumption will occur.

### Ad Valorem Taxes

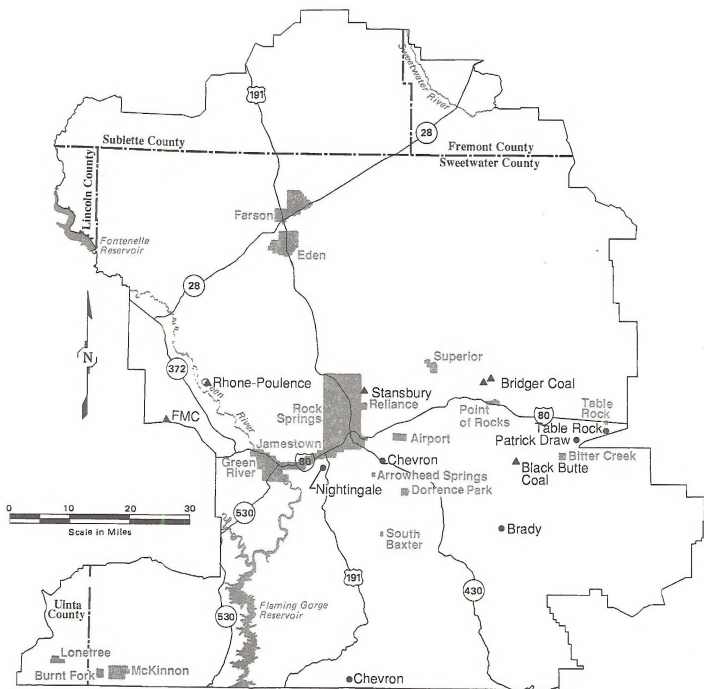
Taxes levied on all taxable property in the 5-county region totaled over \$154 million in 1988, down about 8.36 percent from 1987. Taxes on private railroad cars rose to about \$134 thousand, almost 26 percent above 1987. Motor vehicles returned over \$6.7 million, up about 2 percent over 1987. However, on average, there was an 8 percent decline in taxes collected on other property in the region, dropping these collections to under \$148 million in 1988.

### Sales Tax Collections

Sales tax collections in the region totaled between \$32 million and \$33 million in fiscal year 1988, compared with over \$38 million in fiscal year 1987. The largest percentage declines were realized by Sublette (32 percent), Lincoln (28 1/2 percent), and Sweetwater with over 20 percent.

In fiscal year 1989, the region collected sales taxes totalling over \$32 million. Almost \$14.9 million of this was collected in Sweetwater County. Fremont County accounted for almost \$7 million and Uinta County roughly \$6.5 million. Lincoln County collected about \$2.7 million and Sublette County over \$1 million. Over \$14 million of the region's fiscal year 1989 sales taxes were collected from the retail trade sector. The service sector was next highest with less than \$3.3 million.





City, Town, or Outlying Area

• Industrial Plant

▲ Mine Site

--- County Line

**Map 67**  
**Cities, Towns, Mine**  
**Sites, Counties, and**  
**Industrial Plants**  
**Green River Planning Area**

## AFFECTED ENVIRONMENT

### Use Taxes

In fiscal year 1989, the region collected slightly over \$7.5 million in use tax, up about 15.2 percent from fiscal year 1988 collections. Of the total collected, Sweetwater accounted for almost \$4.2 million. Uinta collected over \$1.7 million and Lincoln over \$1 million with the remainder provided by Fremont and Sublette counties. Almost \$3.2 million of the region's use tax was collected from the mining sector, with the transportation and public administration sectors supplying over \$1.5 million and \$1.4 million, respectively. Contributions by the region's other economic sectors totaled less than \$1 million each.

### In Lieu Tax Payments

Because land held by the federal government is not subject to local government land taxes, the federal government makes entitlement land payments to local governments in lieu of tax payments. In fiscal year 1988, such payments to counties within the 5-county region totaled almost \$2.8 million, which was about 36 percent of total payments in lieu of taxes made to all Wyoming counties that year. Sweetwater County received the largest amount in the region, \$950,419. Fremont County was paid \$811,887 with the other 3 counties receiving less than \$500,000 each.

Entitlement lands in the region totaled close to 12.7 million acres in fiscal year 1988. The BLM accounted for 73 percent and the Forest Service for 25 percent of these lands. The remainder included land administered by the Army Corps of Engineers or National Park Service, or included in National Wildlife Reserve Areas.

### Population

The combined population of the 5-county region (Fremont, Lincoln, Sublette, Sweetwater, and Uinta) totaled about 117,770 in 1987 and 1988, according to the Wyoming Department of Administration and Information. This is approximately the same total present in these counties in 1981. During most of the 1980s, population in the 5-county region rose, reaching over 127,400 by 1985. Poor economic conditions and lack of job opportunities in the region caused the 1986 population to decline. However, the State of Wyoming is projecting population increases for the region between 1987 and 1998, with the 1998 total topping 123,870.

This 5-county region accounts for approximately one fourth of Wyoming's total population, and this is not expected to change over the next 10 years. Sweetwater is the most populace county of the region with about

42,000 persons in 1987 and 1988. Fremont was next with approximately 36,000. The number of net births to deaths in the region in 1988 was 1,206, down from the 2,354 recorded for 1980. For the 1980s, the highest net birth year was 1982 with 2,507.

### Employment

#### General Overview

According to 1989 reports prepared by the Wyoming Department of Administration and Information, employment opportunities during the 1980s were highest in the 5-county region in 1985 when full- and part-time positions totaled almost 64,000. This data indicates that 1985 had about 5 percent more job opportunities available than did 1980 and about 12.6 percent more than 1987.

The Department of Administration and Information stated in its Wyoming Income and Employment Report, 10th edition (October 1989) that in 1987, between one-fifth and one-quarter of the State's full- and part-time positions were located in the 5-county region. The region is projected to retain this share of the State's total positions in subsequent years up to 1998.

According to the Employment Security Commission of Wyoming in its publication "Wyoming Annual Planning Report, Fiscal Year 1989," the highest average annual labor force in the region during the 1980s was recorded for 1986 at slightly over 63,300. However, annual average employment (number of workers actually employed) that year totaled only 56,660, resulting in an average annual unemployment rate for the region of 10.5 percent. In 1987, the region's average annual unemployment rate rose to 11.1 percent, according to the Commission, despite a 7,424 out-migration of workers from the 5-county region between 1986 and 1987.

The highest unemployment rates in 1987 were in Lincoln and Uinta counties, 11.9 percent and 12.0 percent, respectively. However, all but Fremont County (10.3 percent) had unemployment rates of 11 percent or above that year. Lincoln County's rate also had been among the highest in 1982 and 1983 at 10.8 percent and 12.4 percent, respectively. By 1988, the average annual unemployment rate for the 5-county region declined to 8.3 percent, still about 32 percent higher than the annual average for the State of Wyoming that year. Like the State, the region's economy suffered a downturn as the result of the sudden drop in the overall price of oil in 1983 and the subsequent decline in the demand for, and the output of, domestic energy resources.

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### By Standard Industrial Classification

Employment reports by the Wyoming Department of Administration and Information indicate that in 1987 the 5-county region provided about 29 percent of the State's construction jobs, 36 percent of its mining positions, 27 percent of transportation positions, and approximately one-fifth of the positions in the retail, agricultural, manufacturing, wholesale, services, and government sectors. The region also provided about 16 percent of Wyoming's full- and part-time financial sector positions. This state/regional relationship is expected to remain basically the same through 1989.

Within the 5-county region, Fremont and Lincoln counties, jointly, accounted for over 65 percent of the total full- and part-time regional agricultural jobs in 1987. Over 60 percent of the region's mining and about half of its transportation and wholesale jobs were located in Sweetwater County in 1987, as were 30 to 40 percent of the jobs in most other regional economic sectors. Fremont County ranked second in the region as a source of jobs in 1987. It accounted for 30 to 40 percent of positions in the agricultural, manufacturing, financial, services, and government sectors and for 20 to 30 percent of jobs in the transportation, wholesale, and construction sectors. It is estimated that Fremont and Sweetwater counties, jointly, will continue to account for over 60 percent of area jobs through 1989.

The government sector was the leading supplier of regional jobs in 1987 with 11,420 or about 20 percent of the regional total. The services sector with almost 10,820 (about 19 percent) and the retail sector with about 8,856 (about 16 percent of the regional total) were next in importance. The mining sector with about 7,141 jobs and the construction sector with about 4,645 jobs accounted for 13 percent and 8 percent, respectively, of the 1987 regional total. These sectors are expected to continue to be the major suppliers of jobs in the region through 1989.

### Annual Average Weekly Wages of Covered Employment

In both 1984 and 1987, Sweetwater County had the highest overall average weekly wage of the 5 counties (almost \$433 in 1984 and \$465 in 1987). Mining, transportation/utilities, manufacturing, wholesale trade, and construction were the leading wage sectors in both years.

### Income

#### Total Personal

In 1987, total personal income for the 5-county region averaged nearly \$1.4 billion, approximately \$141 million lower than in the previous year, but higher than in 1980. The region accounted for over 1/4 of the state's total personal income in 1987.

All counties in the region, except Fremont, reported total 1987 personal income levels substantially above those of 1980. Fremont County income in 1987 remained about equal to its 1986 income while income in other counties dropped below 1986 levels. Total personal income in Fremont County averaged about \$360 million in 1987. Approximately 1/4 of the regional total originated in Fremont County in 1987, compared to over 30 percent from this county in 1980.

Sweetwater County supplied over 1/4 of the region's personal income in 1987, down slightly from 1980. In 1987, Sweetwater County accounted for almost \$581 million of the region's total personal income. Jointly, the other 3 counties (Lincoln, Sublette, and Uinta) increased their share of the regional total from roughly 1/4 in 1980 to over 30 percent in 1987. Of the 5 counties in the region, these 3 displayed the largest percentage increase in 1986 and 1987 income when compared to 1980. Jointly, they provided almost \$560 million in total personal income to the region in 1986 and \$447 million in 1987 compared to slightly over \$300 million in 1980.

#### Per Capita

The average, annual, per capita income for the 5-county region in 1987 was \$11,575, up about \$1,000 above 1980. This is about 10 percent less than the state's average, annual, per capita income of \$12,706 in 1987. Sublette and Sweetwater counties had the highest average, annual, per capita incomes in the region in 1987, almost \$13,000 each.

### Earned Income - Major Component of Total Personal Income

#### Components

Components of earned income in the 5-county region include wages and salaries, other labor income, and proprietor's income. In 1987, wages and salaries earned

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in the region total over \$1 billion, up 5 percent from wages and salaries earned in 1980. Wages and salaries accounted for over 1/2 of the region's total earned income in 1987.

Other labor income accounted for less than 1/10 of the region's total 1987 earned income. At over \$78 million in 1987, other labor income was 4 percent less than in 1980. Proprietor's income also accounted for about 1/10 of total earned income in 1987. Totalling slightly under \$113 million, it was approximately 4 percent under the 1980 total.

### By Major Economic Sectors

Earned income from the region's major economic sectors totaled about \$1.1 billion in 1987, up about \$36 million from the 1980 total. The region's major economic sectors in order of importance as sources of earned income in 1987 included: mining, government, services, transportation, construction, retail trade, manufacturing, wholesale trade, finance, and agriculture. The agricultural, manufacturing, transportation, wholesale, finance, services, and government sectors realized higher earned income in 1987 than in 1980. The government sector led regional growth with an increase of almost 86 percent from 1980 to 1987. Manufacturing was second with a 45 percent increase followed by transportation and finance with 38 percent and 34 percent, respectively. Agriculture, wholesale, and services realized earnings increases of 15 percent to 16 percent. Earned income from retail trade in 1987 roughly equaled 1980 dollar levels, but was down measurably from levels realized in other years since 1980. Earnings from mining and construction in 1987 were about 30 percent under 1980 income levels. Income earned from construction had fluctuated during the 1980s, but in 1985 and 1986, levels had topped 1980 earnings by 66 percent and 55 percent, respectively. Conversely, mining sector income in the region had declined every year from 1983 through 1987.

Earned income from mining totaled over \$285 million in 1987 compared to almost \$391 million in 1980. Other 1987 earnings by major sectors include construction about \$106 million, government over \$223 million, services almost \$138 million, and transportation about \$132 million. The wholesale and retail trade sectors jointly supplied earned income of almost \$127 million in 1987.

### Relative to the State's Economic

**Sector Totals** In total, the 5-county region supplied about 1/4 of the 1987 earned income in Wyoming. The portion of the state's 1987 economic sector totals sup-

plied by each of the major economic sectors in the region is: mining - 39 percent; construction - 29 percent; transportation - 26 percent; agriculture, wholesale, and retail - each 21 percent; manufacturing and services - each 20 percent; government - 19 percent; and finance - 16 percent.

The 5-county region supplied about 1/4 of the 1980 earned income in Wyoming, also. The portion of the state's 1980 economic sector total supplied by each of the major economic sectors in the region was: mining - 37 percent; construction - 26 percent; transportation and retail - each 22 percent; services - 21 percent; government - 17 percent; wholesale - 16 percent; finance - 15 percent; and agriculture and manufacturing - each 14 percent.

The construction sector had been even more important to the state and region in years 1985 and 1986, when it accounted for 45 percent of the state's total earned income from construction activities.

### By County

Earned income in Lincoln, Sublette, and Uinta counties in 1987 was less than in 1986, but higher than in 1980. Fremont and Sweetwater counties had lower earned income in 1987 than in either 1980 or 1986; in fact, for these 2 counties it was the lowest income reported for any year during the 1980s. By county, the levels of earned income in 1987 (in millions) were Sweetwater - \$511, Fremont - \$245, Uinta - \$169, Lincoln - \$132, and Sublette - \$47. Comparable 1980 earnings were (in millions): Sweetwater - \$513, Fremont - \$305, Uinta - \$105, Lincoln - \$102, and Sublette - \$40.

## Agricultural Sector

### General Characteristics

The following information compares 1987 characteristics of the agricultural sector to those 5 years earlier in 1982. Later information is included where available. The number of farms totaled about 2,155 in the 5-county region in 1987, an estimated 6.5 percent increase over 1982. Total land in farms in the region in 1987 was 6,196,000 acres, up 242,000 acres over 1982. Average farm size at 18,420 acres was about 2,195 acres under the 1982 average. Over 95 percent of the 5-county region farms are located outside the planning area boundary.

Cropland in 1987 totaled 405,000 acres, down about 25 percent from the 1982 level, while farms containing



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cropland rose about 5.6 percent to 1,847. Total pastureland at almost 5.7 million acres was about 3 percent higher than the 1982 total.

Agricultural sales in the 5-county region totaled \$103 million in 1987. Of this amount, livestock sales in the region in 1987 totaled almost \$90 million, about \$19 million higher than 1982 sales. Cattle/calves sales accounted for almost  $\frac{1}{4}$  of 1987 livestock sales. Sheep/lamb/wool sales equaled about 12 percent, and hogs/pigs sales provided most of the remainder. In 1987, there were about 157,000 cattle/calves, 137,000 sheep/lambs, and 4,378 head of hog/pigs sold in the region. According to the State's BiWeekly Ag Statistics report of September 30, 1988, estimated January 1, 1988 inventories of cattle/calves in the region totaled 238,000 head. The October 14, 1988 issue of Biweekly Ag Statistics estimated January 1, 1988 stock sheep inventories in the region at 159,000 head.

### Livestock Grazing on BLM-Administered Lands

The Green River Resource Area supports about 318,647 AUMs of active preference grazing annually. However, annual use of these AUMs by livestock owners over the past 5 years has averaged only 180,362 AUMs. Most of the difference between the total available AUMs and the AUMs actually used each season represents voluntary non-use by livestock operators. If the 5-year average, annual use of 180,362 AUMs is multiplied times the 1991 BLM grazing fee of \$1.97/AUM, it yields about \$355,313 per year in payments to the federal government (USD1 1990c).

The "Wyoming Cow Country" stated that each AUM of livestock production in Wyoming returned an average of \$52 in direct personal income to livestock industry households in 1987. If it is assumed that each AUM of BLM-administered forage enables the operator to produce 1 AU of livestock, then the 180,362 AUMs of average, annual use would result in \$9,378,824 per year in direct personal income to livestock industry households. Using a multiplier of 3.32 times each \$1.00 of this direct personal income results in \$31,139,933 of total income (direct+indirect+induced) generated annually from the use of BLM-managed AUMs in the planning area. The multiplier is obtained from the Input/Output Model developed by the extension specialists, College of Agriculture, University of Wyoming.

BLM administers about 70 percent of all the land within the planning area. Most of the remainder is state or private land. The quality of the pasture on public and private land within the Resource Area varies as does the

importance of public AUMs to individual livestock operators. Therefore, it is impractical to make blanket statements for the Resource Area regarding the full extent of the impacts to livestock operators from any increase or decrease in available public AUMs. The degree to which each individual operator depends upon public AUMs to sustain his/her livestock operations determines the magnitude of the impact to that operation subsequent to any changes in the availability of public AUMs. Thus, if a decrease in AUMs would result in an individual operator being forced out of business, the negative impacts to the individual would likely be greater than the positive benefits of \$52 per animal unit.

### Minerals

#### Oil and Gas

Major minerals produced in the 5-county region include oil, gas, coal, trona, and uranium. The 1989 output for these was 21,384,034 barrels; 519,342,487 MCF, 16,534,538 tons; 16,212,715 tons; and 238 tons, respectively.

The level of oil production has been declining in the region since 1984, when it was over 29 million barrels. Gas output has fluctuated in past years, but has trended upward since 1986 when output dipped to 240 billion cubic feet. All counties in the region produce oil and gas, but Sweetwater and Uinta counties produce the most. Jointly, these two counties produced about  $\frac{3}{4}$  of the region's oil and almost  $\frac{3}{4}$  of its natural gas in 1989.

#### Coal

Coal output has also fluctuated in past years. Output has bounced between about 12.8 million and 17.2 million tons since 1982. Coal is produced in Lincoln and Sweetwater counties with about 70 percent produced by Sweetwater County in 1989.

The Resource Area is estimated to have produced almost 11.9 million tons of coal in 1990 from four mines, Black Butte, Bridger, Lion, and Pilot Butte. The estimated value of this coal was about \$212.1 million. (Coal values are calculated using a Resource Area average price/ton of \$17.82.) Over 97 percent of the 1990 output and related output value is attributed to the Black Butte and Bridger mines. In addition to the direct value of the Resource Area's coal output, the indirect and induced output added to the area economy from this level of coal activity probably amounted to about \$168.58 million in 1990 for a total area benefit of \$380.68 million. (Source of mining multiplier (1.795145): University of Wyoming,

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College of Agriculture, Department of Agricultural Economics Extension.)

By 1995, a fifth mine, Deadman Wash, is expected to begin producing (about 500,000 tons of coal in 1995, valued at \$8.91 million). By the year 2005, a sixth mine, Beans Spring, will be producing (initial output will be 800,000 tons in 2005, valued at \$14.26 million). However, the Lion mine, which is now producing about 107,000 tons valued at almost \$2 million annually, is expected to cease production in 2002. Subsequently, Deadman Wash is expected to cease production by 2007. Therefore, annual Area coal output is projected to be highest (almost 18.4 million tons, valued at \$327.89 million) in 2005. By the year 2010, output will have declined to about 12.8 million tons, valued at slightly over \$228 million.

### Employment

Direct annual employment for the 4 mines in 1990 is reported by the State Inspector of Mines to have totaled 939 employees. About 91 percent of these workers were employed by the Black Butte and Bridger mines. In addition, about 19 persons were also employed as of December 31, 1990, in a coal coking plant in Rock Springs, Wyoming. Coke production from this plant was 76,964 tons in 1990 (Wyoming 1990).

Mine employment in 1995 could increase to 1,189 employees when the Deadman Wash mine begins production. However, employment levels in this and other mines coming on line during this 20-year period will depend to a large extent upon who receives the competitive coal leases. New independent mines may require the level of employees estimated for the expected additional mines projected in this RMP, but if leases are received by ongoing mine operators the ongoing mines may not need as many employees for the new lease portion of their operations as this RMP projects.

However, direct employment by Area mines is expected to decline to 1,136 in 2002, reflecting the projected Lion mine closure. It will, subsequently, increase to 1,286 workers annually during years 2005 and 2006 after Beans Spring begins to operate. However, after the Deadman Wash mine closes in 2007, the Area will again have only 4 operating mines, and annual employment is expected to drop to 1,036, where it is projected to stay through the remainder of the plan period. This 1,036 annual level is almost 100 employees above the reported 1990 level. (Source of projections: Rock Springs District minerals specialists.)

### Cumulative Coal Output and Value

The cumulative coal output for the Resource Area during the years 1991 through 2010 is expected to total about 324.85 million tons, valued at almost \$5.8 billion. This level of coal activity and direct output value is estimated to result in an increase in total (direct, indirect, and induced) output by the Area economy over the 1991-2010 period of about \$10.4 billion.

Direct coal sector household income is projected to benefit by about \$1 billion over the 20 years and total area household income (direct, indirect, and induced) by almost \$1.9 billion as the result of projected coal activities in the Resource Area.

### Coalbed Methane Activities

Various companies have drilled test sites for coalbed methane in southwestern Wyoming, but actual production levels for this product have not been established for the Green River Resource Area. It is estimated that there is about 3,024,000 MCF of coalbed methane gas in place per well per 320 acres in the Resource Area. Of this amount, 1,814,400 MCF is estimated to be recoverable, assuming that at least 232 economically productive wells are producing by the year 2000 (Dave Chase, Petroleum Engineer, Rock Springs District Office).

For a coalbed methane well to be an economically productive venture, it must at least return the related drilling, facility, and completion costs. To be profitable over time, the rate-of-return of the project must equal or exceed the discount rate that is appropriate to the time period in which the well will be producing.

### Sodium/Trona

Trona is mined by five companies west of Green River in Sweetwater County. These companies process the trona into soda ash and other sodium-based products. However, only three of these companies (Rhône-Poulenc, FMC Wyoming Corp., and TG Soda Ash Inc.) have mining operations partially within the resource area (Wyoming Geo-Notes, No. 30, May 1991 by the Geological Survey of Wyoming; BLM Rock Springs District and Green River Resource Area Specialists).

The Rhône-Poulenc mine produces about 3.2 million tons of trona per year from the area, and the other two companies each produce 0.9 million tons. Over the 22 years from 1989 through 2010, it is estimated that these mines will have produced a total of 110 million tons of trona which will be converted into about 60.5 million tons of soda ash, valued at over \$7.2 billion (Appendix 10).



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Annual direct employment at the Rhone-Poulenc mine is about 539. The FMC Wyoming Corp. employs about 1,156 workers, and TG Soda Ash Inc. about 324 in their annual trona mining operations. Probably not all of the employees of FMC and TG live and work in the resource area (BLM Rock Springs District and Green River Resource Area Minerals Specialists, June 1991; Wyoming 1990). This level of annual employment is projected to continue over the life of this plan, given that the total annual trona output from these three producers remains at 5 million tons, as expected.

Wyoming is now the nation's only producer of soda ash. The demand for trona has been enhanced by the increasing use of soda ash in the manufacture of caustic soda (replacing chlorine in the process), and also as a substitute for caustic soda in some applications.

There is also a sodium-enriched brine water referred to as black trona water which contains organic materials. BWAB Inc., a Denver-based company, is currently proposing to test the brine waters in hopes of producing soda ash. In addition, it may be possible to produce organic-based fungicides, pesticides, and pigments from the by-product of the water (Wyoming Geo-Notes, No. 30, May 1991). Currently, there are no production estimates available for the brine water development.

### Outlook for Minerals

The State of Wyoming projects annual oil production in the region at about 28.5 million barrels in 1990, about 26 million barrels in 1991 and 1992, 24.6 million barrels 1993, and 18 million barrels in 1994. The region's natural gas production is projected to increase through 1993 with a subsequent decline to about 417.3 billion cubic feet in 1994. Coal output is expected to fluctuate annually through 1994 as it has in the recent past, but it is not expected to exceed 17.7 million tons/year. Trona production is expected to increase to 20 million tons by 1994. Uranium output is projected to fluctuate annually but not to exceed 50,000 tons/year between 1990 and 1994; however, uranium is not produced within the resource area.

### Assessed Valuation

The region's total 1990 mineral assessment for 1989 production was over \$1.43 billion compared to a 1983 assessment of over \$1.95 billion. The region's highest assessed values occurred in 1985 at over \$2.2 billion. The 1989 oil output was assessed in 1990 at over \$391 million, down almost 50 percent from the 1983 valuation of 1982 production. The decline in oil values began in 1986 following upward movements in these values in

1984 and 1985. The assessed value of oil in 1985 was slightly under \$794 million.

Natural gas production for 1989 was assessed at \$595,771,581 in 1990. This compares to a peak year 1985 assessment of over \$1 billion. Gas values for the 5 years preceding 1988 all exceeded the 1990 assessment.

The assessed value of coal production fluctuates from year to year. The coal assessment topped \$297 million in 1990, down about \$61 million below the 1986 assessment. Of the last 7 years, 1986 had the highest assessment, over \$358.6 million on 1985 production.

The 1990 assessed value of 1989 trona production reached \$150.6 million, the highest value for trona output recorded during the 1983-1990 period. Miscellaneous minerals produced in the region in 1989 were assessed in 1990 at \$369,932, substantially below such assessments in most of the preceding years.

### Recreation

Total annual direct expenditures by recreationists utilizing the Green River Resource Area in 1989 is estimated to have been slightly over \$5.4 million (Appendix 10). About 89 percent of this amount was the result of consumptive recreational activities (fishing and hunting). In addition, between 4 percent and 5 percent of the total was expended for non-consumptive activities that involved land-based motorized recreational travel, including snowmobiling. Camping and non-motorized travel added another 4 percent to 5 percent. The remainder of the expenditures were associated with water and site-based recreation (other than fishing) plus various winter sports.

Big game hunting accounted for almost \$3.3 million (60 percent) of total direct expenditures by recreationists in the resource area in 1989.

Hunters of small game, waterfowl, and other birds are estimated to have spent about \$1.4 million in the resource area in 1989.

### SOILS

Soils of the planning area are usually light colored and of varying textures and development. There is little or no leaching and soluble salts accumulate. Some darker colored soils, with greater amounts of organic matter are found in areas of increased moisture due to such factors as aspect, elevation, and drainage (Map D) and Appendix 5-4.

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Varying amounts of soluble salts occur in most of these soils. Soluble salts reach levels in some soils that affect their management potentials due to toxicity, reduced infiltration rates, limits on nutrient availability, and reduction of water available to plants. Salinity in the Colorado River Basin, which includes the planning area, threatens the municipal and industrial needs of over 18 million people along with the irrigation of 2.5 million acres of cropland. Major causes of an increased salinity contribution from public lands are overgrazing, off-road vehicles, and energy exploration and extraction. The effects of these activities cause compaction of the soil surface accompanied by a reduction of plant cover which in turn leads to increased runoff carrying salt laden sediments into drainages. Controlling salinity from nonpoint sources is closely related to controlling sediment yield and runoff.

Moderately and strongly saline soils have the greatest potential for salt contribution to the Colorado River system. However, slightly saline soils which dominate the planning area also contribute large volumes of salt due to their extensive acreage. Possibly over 50 percent of total salt yields is derived from slightly saline soils. Within the planning area, moderately saline soils are generally found along major drainages such as Bitter Creek, Big Sandy River, Green River, and Blacks Fork River.

The soils here are especially dependent on vegetative cover to remain in place. Vegetative cover is probably the most important of management variables influencing runoff and sediment yield. Vegetation acts as a buffer between the soil surface and the surrounding environment. Ground cover, as well as root systems, anchor the soil, recycle elements, and add scarce organic matter.

Aspect and elevation have a strong influence on soil development in this region. Areas of higher elevation and those with a north-facing aspect receive and retain greater amounts of snow and consequently support greater amounts of vegetation. South-facing slopes are drier due to greater solar exposure and usually have sparser vegetative cover. The density of vegetation in turn has a strong influence on soil development, nutrient availability, and water-holding capacity.

Soil moisture is critical when determining the limiting factor in management of lands in southwestern Wyoming. Erosion is a serious factor which directly affects the available water-holding capacity in semi-arid soils. The loss of the surface horizon exposes the argillic horizon and other subsurface horizons to direct loss of

moisture to wind and sunlight. Consequently, the amount of moisture available to plants in an eroded soil is lower than in a stable soil which has retained its surface and subsurface horizons.

Most surface-disturbing activities affect soils, causing on-site soil loss from wind and water erosion, and compaction. This often generates off-site sediment contamination in streams and downslope soils.

Soil loss can be caused by raindrop splash, by sheet, rill, and gully erosion, by wind erosion, and by mass wasting. Raindrops loosen and dislodge soil particles as they strike the soil surface. Sheet erosion is the washing of large areas with sheet-like, unconcentrated water flows. This is the initial phase in the downslope movement of soil particles dislodged by raindrops. Concentration of these flows forms small, shallow channels called rills that have widths and depths of a few inches. Sloping surfaces or large flow volumes cause this concentration process. The presence of rill erosion features indicates watershed deterioration.

The convergence of rills with increased flow volumes forms gullies that have widths and depths measured in feet. Gullies can be conduits for huge volumes of water and soil materials moving downslope to streams. Mass wasting is the loss of large soil volumes such as those caused by the collapsing or headcutting of gully walls, gully bottoms, and streambanks. The extent to which this progression of erosional features (sheetwash, rills, and gullies) is present on a landscape indicates the severity of the erosion problem.

Surface-disturbing activities have direct and indirect impacts on soils. Impacts would be caused by such activities as geophysical exploration; construction of drill pads, roads, and other facilities for minerals operations; hazardous waste disposal and cleanup; produced water disposal; abandonment and reclamation of facilities; trenching and strip mining; landfill construction; framing; construction of powerlines, pipelines, roads, and highways; timber harvesting activities such as skidding, mechanical slash piling, road building, and vegetation removal; fence construction; planting and seeding; grazing by livestock, wild horses, and wildlife; construction of water developments and reservoirs; spraying; prescribed burning; ORV use; recreation site construction; implementation and maintenance of watershed projects and contour furrows; and wildfire suppression.

Table 3-16 shows the types of activities that commonly affect public lands, the areas each one normally

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disturbs, and the estimated maximum soil losses that could be expected. The rate of disturbance per unit and loss per acre per year are reasonable figures based on

field observations, literature, and consultation. They provide a sense of scale and a basis for comparison of the impacts from the various activities.

**TABLE 3-16**

### ACTIVITIES AFFECTING SOILS, ESTIMATED AREAS OF DISTURBANCE, AND MAXIMUM ANNUAL SOIL LOSSES

Activity	Acreage of Disturbance/Unit	Maximum Soil Loss (tons/acre/year)
<b>Cultural Resources</b>		
Paleontological investigations		50.0
<b>Fire and Access Management</b>		
Full suppression (fire lines)		15.0
Prescribed burning		0.5
Existing roads	3.0/mile	5.0
Road maintenance	3.0/mile	20.0
<b>Forestry</b>		
Clearcut logging (vegetation removal)		5.0
Skid trails	3.0/mile	40.0
Access roads	3.0/mile	45.0
Landings	0.5/site	40.0
<b>Lands and Realty</b>		
Distribution powerline (pole)	1.0/mile	1.5
Telephone line (buried)	0.5/mile	30.0
New access road	4.0/mile	80.0
Existing sanitary landfill		30.0
<b>Minerals</b>		
Seismic activity	1.0/mile	5.0
New well	3.5/well	80.0
Road	4.8/mile of road	
New production well	3.0/well	70.0
Existing production well	1.0/well	5.0
New tank, treater facility	2.0/unit	75.0
Existing tank, treater facility	2.0/unit	5.0
Pipeline, flowline	2.0/mile	30.0
Sand and gravel mining	5.0/pit	60.0
New surface mine		100.0
Operating surface mine		40.0
Abandoned surface mine		15.0
<b>Range and Wildlife</b>		
Grazing	1 to	4.0
Reservoir construction	2.0/unit	75.0
Pipeline construction	1.0/mile	20.0
Fence construction	0.5/mile	1.0
Contour furrowing, ripping		1.0
<b>Recreation</b>		
Two-track trail use (vehicles)	1.5/mile	1.0
Off-road vehicle use	2.0/mile	2.5
Hiking trail use	0.2/mile	0.1

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Soils which may require special attention as a result of surface-disturbing activities are separated into categories of unstable soils, sandy soils, and erosive soils (see Appendix 5-5).

### Desert Land Entry Restrictions

The Conservation Reserve Program, authorized by the Food Security Act of 1990, attempts to remove highly erodible farm lands from cultivation. Its authority is contained in Subtitle D of Title XII of the Act. The program is being administered by the Agricultural Stabilization and Conservation Service with the Soil Conservation Service providing technical support.

The Conservation Reserve Program aims to remove from farming:

Any cropland in Land Capability Class 6 or higher due to steepness of slope or shallow depth to bedrock. This restricts soils on slopes greater than 10 percent and/or less than 20 inches to bedrock.

Cropland in Capability Classes 4 and 5 (in Wyoming) that has an average annual erosion rate of more than three times that at which the soil forms (1 to 5 tons per year).

Two subsections of the Act make agricultural producers ineligible for benefits of certain USDA programs if they bring highly erodible land into cultivation without an approved conservation plan; and, if they produce agricultural commodities on wetland that has been substantially altered or drained.

Considering these goals, the public interest would not be served by allowing Desert Land Entry or by issuing agricultural leases for land of the capability classes that the Department of Agriculture is attempting to retire.

In addition to the restrictions imposed by this program, no Desert Land Entries would be allowed on saline soils having an electrical conductivity greater than 4 or a pH greater than 8.4. The Department of Agriculture and the Bureau of Reclamation are spending millions of dollars in the Colorado River Salinity Control program to decrease the amount of salts, much of it from return flow irrigation water, being dumped into the Colorado River. "The Eden-Farson area contributes an estimated 164,000 tons of salt to the Colorado River, which represents about 2 percent of the average salt loading at Imperial Dam, California. The primary sources of salt loading are springs and seeps along the Big

Sandy River below Farson. Studies have indicated that the majority of the saline seep inflow to the Big Sandy is believed to result from irrigation" (Bureau of Reclamation 1989). To release such land to irrigated cultivation would not be in the public interest.

### VEGETATION

Satellite imagery (LANDSAT) and computer enhancement techniques were used to provide a general land cover class map and associated acreage (Map E). The LANDSAT imagery, as interpreted by Resource Area specialists, distinguishes broad cover associations (Level III), generally discernible by percent ground cover and land form.

The following summaries are arranged by community type applicable to broad LANDSAT classification schemes. The BLM site specific plans will describe impacted vegetation in more detail. Table 3-17 provides the acreage for the LANDSAT classification.

#### Low Density Sagebrush Class

This LANDSAT classification encompasses communities dominated by various shrubs with a canopy cover of less than 35 percent. The major components associated with this classification are the big sagebrush, low sagebrush, desert shrub, and grassland communities. These communities are found throughout the planning area on all slopes, aspects, substrates, and in all precipitation zones.

The communities that comprise the low density sagebrush classification are abundant and are important as a forage base for livestock throughout the planning area. Cattle utilize the grass and forb component extensively during the spring, summer, and fall while sheep utilization takes place on the shrubs, grasses, and half shrubs during the spring, fall, and winter. These communities also supply important yearlong forage for antelope, and to a lesser extent, mule deer. Many nongame species utilize these communities throughout their life cycle and sage grouse strut, nest, and raise young in them. Wild horses will utilize these communities yearlong in most of the wild horse herd areas. Vegetative production estimates for this and all other classifications can be found in Appendix 11-1 and average stocking rates can be found in Appendix 11-2. Shallow soils and arid conditions limit the feasibility of manipulating the various communities of this classification to achieve greater vegetative production, diversity, or species change.

## AFFECTED ENVIRONMENT

### High Density Sagebrush Class

This LANDSAT class encompasses communities dominated by various shrubs or other high production vegetation with a canopy or ground cover of greater than 35 percent. The major components associated with this classification are the Wyoming big sagebrush-grass, mountain big sagebrush-grass, mountain shrub, meadows, and some open cover aspen stands. All of the

communities represented by this classification are found on rolling to steep topography, on all aspects, and generally above 7,000 feet. Sites occupied by these communities generally receive 10 or more inches of available precipitation per year.

The communities that comprise the high density sagebrush classification are fairly abundant in the higher elevations and moisture regimes of the planning area.

**TABLE 3-17**

### LANDSAT CLASSIFICATION ACREAGE AND ASSOCIATED COMMUNITIES

LANDSAT Class	Communities	Acreage <sup>1</sup>
Sagebrush (high density)	Wyoming big sagebrush Mountain big sagebrush Mountain shrub Meadow Open Cover Aspen	683,600
Sagebrush (low density)	Wyoming big sagebrush Low sagebrush Desert shrub Grassland	3,619,700
Saltbush	Saltbush Half shrub	315,600
Greasewood	Greasewood	261,500
Aspen	Aspen Aspen/Sagebrush	18,400
Riparian	Meadow Willow Cottonwood Greasewood Sagebrush	18,200
Conifer	Conifer	8,000
Juniper	Juniper	109,500
Barren	Barren	226,800
Sand Dune	Sand Dune	17,800
Agriculture	Agriculture	45,500
Water	None	28,400
<b>Total Acres</b>		<b>5,353,000</b>

<sup>1</sup> All figures are rounded.



## AFFECTED ENVIRONMENT

Cattle utilize the grass and forb component extensively throughout the late spring, summer, and early fall, while sheep utilize the shrubs and grasses while lambing and trailing to summer and winter range. These communities also supply important yearlong forage for mule deer and elk and summer forage for pronghorn antelope. In several areas these communities are considered crucial deer winter range and elk calving areas. Many nongame species utilize these communities, and sage grouse can be found in large numbers during the summer months. Wild horses will utilize these communities yearlong, but concentrations can generally be found during the late spring, summer, and early fall. Vegetative production estimates for this classification can be found in Appendix 11-1 and average stocking rates can be found in Appendix 11-2.

Many of the communities associated with this classification have the potential, through manipulation, to increase herbaceous production and benefit livestock or in certain instances, wildlife production. The most practical methods to remove sagebrush or diminish community dominance are to burn or chemically treat selected individual sites. It is generally accepted that the communities that comprise the high density sagebrush classification have favorable moisture, soils, understory components, and produce enough shrub cover to make treatment of this classification feasible. Prescribed burns will take place only in the 10 inch and above precipitation zones. Potential acreage for prescribed burning is 290,000 acres.

Prior to manipulation, a site will be evaluated against objectives determined for management of the area and responses expected from associated vegetation. Many publications discuss the response of various range plants to fire and will not be reiterated here; a summary of responses is found in Appendix 11-3, Appendix 11-4, and Appendix 11-5 (Wright, et al. 1979). Appendix 9-5 contains a list of range improvement and vegetation guidelines.

Chemical sagebrush manipulation is often more expensive than burning and is therefore often not a feasible alternative. Studies have indicated that the use of herbicides has a negative impact to the forb component of a sagebrush-grass community. Chemical sprays also often impact nontarget vegetation within communities if not timed correctly.

### Saltbush Class

This LANDSAT class encompasses communities dominated by various shrubs and half shrubs that tolerate high salt content or exchangeable sodium. These

communities are generally found in the 7- to 9-inch and lower ends of the 10- to 14-inch precipitation zones. The major components associated with this classification are the saltbush and half shrub communities. In the eastern half of the planning area, this classification could not be accurately determined from the LANDSAT images; therefore, existing vegetation inventory data was integrated into the image, allowing for a more accurate representation.

Plant cover in this classification is generally sparse due to climatic and edaphic factors; however, this classification provides important fall and winter forage for livestock and wildlife. Due to high salt content in the soils and the aridity of the associated communities, attempts to manipulate vegetation to produce more desirable or plentiful forage are not normally feasible. Before implementing management practices such as grazing systems and rehabilitation, a thorough analysis of the community structure and potential should be conducted. Vegetative production estimates for this classification can be found in Appendix 11-1 and average stocking rates can be found in Appendix 11-2.

### Greasewood Class

This classification encompasses communities dominated by black greasewood (*Sarcobatus vermiculatus*) that are commonly found on flat, alluvial fans in canyons and flood plains adjacent to intermittent and perennial streams in the 7- to 9-inch and 10- to 14-inch precipitation zones or in association with stabilized sand dunes. The soils supporting this community are generally deep, poorly drained, and moderately to strongly alkaline. The associated understory vegetation is usually sparse due to the soil structure, arid conditions, and competition generated from the greasewood canopy.

The greasewood classification seldom represents pure stands of greasewood, more likely an intermingling of other classifications including low density sagebrush, saltbush, and in some cases riparian. In these instances, associated species will be similar to those described for the specific classification. Where classic greasewood communities occur along saline or alkaline drainage bottoms, associated species normally found are saltbush (*Atriplex gardneri*), tansy mustard (*Descurainia pinnata*), meadow barley (*Hordeum brachyantherum*), sandberg bluegrass (*Poa secunda*), and basin wildrye (*Elymus cinereus*).

This classification is fairly abundant in the arid canyons and sandy areas of the planning area, and provides forage and cover for all types of wildlife, classes of livestock, and wild horses. Vegetation manipulation



## AFFECTED ENVIRONMENT

opportunities in greasewood communities are often limited by edaphic and climatic conditions, and rehabilitation should be attempted only in severely depleted sites using methods that save as much native vegetation as possible. Vegetative production estimates for this classification can be found in Appendix 11-1 and average stocking rates can be found in Appendix 11-2.

### Aspen Class

This LANDSAT classification encompasses communities dominated by aspen (*Populus tremuloides*). The major components associated with this classification are pure aspen communities and communities that have aspen intermingled with big sagebrush (*Artemisia tridentata*).

Aspen communities commonly occur as transitional vegetation between sagebrush and conifer zones, but can also be found on northern and eastern slopes where snowbanks accumulate and along the upper reaches of perennial streams in the 10- to 14- and 15- to 19-inch precipitation zones. The soils that support this community are generally deep, well drained, and contain a high level of surface and near surface organic matter.

Because it supplies abundant forage and cover, the aspen community is important to livestock and many species of wildlife, and recreationists are attracted to this community to camp, hunt, hike, and view wild flowers.

Aspen stands are generally considered to be seral communities, and if left undisturbed, can eventually develop into a conifer association. Management to maintain aspen stands typically involves disruption of the overstory, by either logging or burning, to allow root sprouting. Overgrazing of root sprouts can cause stands to be even aged, which may eventually lead to stand die off and replacement by another vegetative community. Vegetative production estimates for this classification can be found in Appendix 11-1 and average stocking rates can be found in Appendix 11-2.

### Riparian Class

This LANDSAT classification encompasses communities that have some level of riparian vegetation and available water. The major components associated with this classification are the meadow, willow, cottonwood, greasewood, and sagebrush communities. These communities can generally be found along the Big Sandy, Little Sandy, Sweetwater, Green, Black's Fork, and Henry's Fork river systems, along many small perennial and intermittent streams, and around hundreds of springs, seeps, sloughs, and reservoirs in all precipitation zones.

The soils that support these communities are generally deep, rich loams high in organic matter, except in moist greasewood communities, where the subsoils may be moderately to strongly alkaline. In many instances, riparian areas are too small to be interpreted from the LANDSAT image, and are therefore included in bordering classifications.

Because of relationships to water and resultant high forage production, riparian communities are very important and are used for food, cover, and nesting habitat for a variety of domestic and wild animal species. The natural beauty and available water provide opportunity for a variety of recreational activities such as camping, fishing, hunting, waterskiing, swimming, and other related activities.

Because of the demands on and importance of riparian communities, management considerations have focused on protecting these areas from depletion of vegetation and associated wildlife species. Fencing and using certain grazing systems have been effective tools to maintain and improve the quality and quantity of riparian ecosystems. Vegetative production estimates for this classification can be found in Appendix 11-1 and average stocking rates can be found in Appendix 11-2.

### Conifer Class

This LANDSAT class encompasses communities that are dominated by conifer species. Conifer stands occur along the foothills of the Wind River range, Little Mountain, Pine Mountain, and Hickey Mountain. At lower elevations, conifer stands can be found on northern and eastern slopes where additional moisture from snow banks is available, and at higher elevations occupy all aspects.

Timber types grouped under this classification include lodgepole pine (*Pinus contorta*), subalpine fir (*Abies lasiocarpa*), Douglas fir (*Pseudotsuga menziesii*), Englemann spruce (*Picea engelmannii*), blue spruce (*Picea pungens*), and limber pine (*Pinus flexilis*). Many different plant associations may occur under these timber types and are dependent on soils, aspect, moisture, and light availability. A complete description of forest habitat types and plant communities is discussed in *Forest Habitat Types of Eastern Idaho-Western Wyoming* (USDA 1983).

The communities that comprise this classification provide very little forage for livestock; however, wildlife use them for cover and limited browsing. Recreationists are attracted to conifer communities to camp, hunt, enjoy scenery, and view wild flowers. Vegetative pro-

## AFFECTED ENVIRONMENT

duction estimates for this classification can be found in Appendix 11-1 and average stocking rates can be found in Appendix 11-2.

### Juniper Class

This LANDSAT classification encompasses communities dominated by Utah juniper (*Juniperus osteosperma*) and limber pine (*Pinus flexilis*). This classification could not be accurately determined from the LANDSAT images; therefore, existing vegetation inventory data was integrated into the image, providing a more accurate representation. These communities are generally found at 5,400 to 8,000 feet on warm, dry foothills with shallow, sandy or rocky soils, near buttes, cliffs, or rock outcrops in the 7- to 9- and 10- to 14-inch precipitation zones. The juniper communities frequently merge with big sagebrush (*Artemisia tridentata*) communities which occupy deeper soil pockets. Juniper grows well on deeper soils, but periodic wildfire has restricted the older stands to rocky soils where the understory is usually insufficient to carry a wildfire. Along the southern edge of the planning area, east of Flaming Gorge Reservoir, a small area of Pinyon (*Pinus edulis*)-Juniper communities exist, representing the northern extent of this community in Wyoming.

Juniper communities are fairly abundant in the southern half of the planning area, and provide valuable yearlong cover and forage for elk and mule deer, and many nongame species. Forage production for livestock and wild horses is limited due to poor soils and competition with juniper for light, water, and nutrients.

Manipulation (burning and chaining) of juniper communities to produce or increase herbaceous vegetation and benefit livestock, and in some instances, wildlife is practiced in many areas of the country where heavy stands of juniper exist on deep soils in association with sufficient desirable vegetation. Due to the site potential, associated soils, and existing vegetation found in conjunction with most of the juniper stands in the planning area, manipulation is not generally economically or realistically feasible. Vegetative production estimates for this classification can be found in Appendix 11-1 and average stocking rates can be found in Appendix 11-2.

### Barren Class

The barren classification contains lands with less than 10 percent ground and aerial vegetation coverage, including rock outcrops, badlands, slick spots, steep slopes, roads, developments, etc. Production levels are minimal, and in naturally occurring barren areas, there is

very limited opportunity for improvement or revegetation. Artificial barren areas can and may be reclaimed/revegetated with native species after disturbance ceases. Use of barren areas by livestock and wildlife is minimal.

### Sand Dune Class

Sand dune communities can be found in the east central portion of the planning area at elevations from 5,800 to 7,000 feet on upland positions with rolling or rough terrain and highly permeable, unstable, or shifting soils. Numerous intermittent or perennial ponds form at the bases of the rolling dunes. Aquatic vegetation may become associated with these ponds, but the primary vegetation is that which is associated with the dunes.

The dunes supply limited forage, but adequate cover and protection to livestock and wildlife, although elk frequent the area and nongame species are abundant. Recreationists use the area heavily for off-road vehicle driving. Vegetative production estimates for this classification can be found in Appendix 11-1 and average stocking rates can be found in Appendix 11-2.

### Agriculture Class

This classification includes acreage that is cultivated, irrigated, or otherwise produces a crop or hay, although the Green River and Rock Springs golf courses can be found in this classification, as can most fenced private land.

### Poisonous and Noxious Plants

Poisonous plants occur throughout the planning area, although cases of livestock deaths due to these plants are infrequent. Appendix 11-6 lists the major poisonous plants found in the planning area. Appendix 11-7 lists the noxious weeds found in the planning area.

## VISUAL RESOURCES

Visual resources in the planning area are best described using the physiographic provinces within the planning area. These physiographic provinces are large scale geographical units of land. Common characteristics (landform, water, color, etc.) unlike those outside their boundary exist within each. Each province helps establish a logical frame of reference with which to classify the relative visual quality for each scenery quality rating unit. A detailed description of the 34 scenery quality units in the planning area is located in the Green River Resource Area Office.

## AFFECTED ENVIRONMENT

The planning area lies mostly within the Wyoming Basin physiographic province; however, the Wind River Mountains are in the central Rocky Mountain province. The Wyoming Basin is located in the west-central portion of the state. It is bounded on the north by the Wind River Range and on the south by the Uinta Mountain Range. The province extends east into the Red Desert and west to the foothills of the Wyoming Range. The planning area includes some of the Red Desert.

The landscape found in the Wyoming Basin Province is characterized primarily by highly erodible soils and multi-colored, horizontally layered sedimentary bedrock. These conditions have generated the formation of the colorful badlands landscape common throughout most of the province. Between these badland areas, the land form is primarily low rolling or flat-topped hills. Dramatic elevation changes and steeper slopes both become more dominant near the Wyoming and Wind River Mountain ranges.

The general lack of precipitation and localized occurrence of surface water resources provide for three major vegetative communities. Riparian zones are commonly found along all the perennial streams and rivers, as well as along several of the areas having intermittent surface water. Common species include willows, cottonwood, water birch, and red dogwood, as well as various wet-mesic to hydric grasses, sedges, and forbs. The remainder of the vegetation is sparse and tends to be located on the well-drained soils of side slopes and hillsides in the province. Vegetative species commonly found in these areas include Wyoming sagebrush, rabbitbrush, current, scattered patches of Douglas fir and aspen, various dry mesic to xeric grasses (such as sandberg, bluegrass, Indian ricegrass, etc.), and forbs (e.g., buckwheat, pussy toes, phlox, etc.). Alkaline conditions occur in localized areas where high elevation rates exceed the volume of infiltrating surface water. The phenomenon results in an accumulation of various minerals (e.g., sodium and calcium), leaving a white residual layer on the soil surface. Salt tolerant vegetative species that commonly frequent these areas include greasewood, shadscale, saltbush, etc. (refer to Vegetation MSA).

Surface water in the Wyoming Basin Province is primarily restricted to the Green River and its tributaries (e.g., New Fork, Piney Creek, Big Sandy, and Hams Fork). Other major surface water resources include Fontenelle, Flaming Gorge, and Big Sandy Reservoirs.

Cultural modifications within this physiographic province are primarily a function of activities associated with petroleum production. Oil and gas facilities, pipelines,

roads, power distribution lines, etc., are all very common in the producing areas (western half) of the province. Ranching and other rural or small community developments comprise the remainder of the province's cultural modifications, as well as cities and towns.

Scenery quality classes were developed for the planning area. Sensitivity levels as determined by estimated use volumes for high travel routes in the scenery areas and use association (an estimate of user sensitivity to a given visual environment).

Visual zones for each traveled route that had a high or medium use volume were developed to identify the foreground, middle ground, and background areas. Where foreground-middle ground areas overlapped the background area of another travel route, the foreground-middle ground classification took precedence. This was the case throughout the planning area resulting in the use of the foreground-middle ground classification throughout.

From the sensitivity level determinations, four visual classes were identified: Class II - retention, changes should not be evident; Class III - deviation, changes may be evident but subordinate; Class IV - modification where changes are evident and somewhat dominant; and Rehabilitation Areas - the natural character of the landscape has been disturbed to a point where rehabilitation is needed to bring it up to one of the higher classifications see Maps 22 and 36.

Areas with important scenic and visual values include the Greater Sand Dunes ACEC, recreation sites, Wilderness Study Areas, South Pass Historic Area and the scenic vistas along Highway 28, White Mountain Petroglyphs, rivers, the Wind River Mountains, Red Creek, Currant Creek, major reservoirs, historic trails, Continental Divide Snowmobile and hiking trails.

## WATERSHED

The planning area is located in the upper reaches of the Colorado River Basin. There are approximately 1,700 miles of streams and approximately 46,000 acres of lakes, ponds, and reservoirs in the area. The major reservoirs in the area are: Eden Valley Reservoir, Sandy Reservoir, Fontenelle Reservoir, and Flaming Gorge. The major watersheds in the area are the Green River which is part of the Colorado River Basin, and the Sweetwater River which is part of the Missouri River Basin Map 23. Annual discharge from these two basins are approximately 1,308,740-acre feet/year and 6,440-acre feet/year, respectively.

## AFFECTED ENVIRONMENT

Stream flow in the area can be characterized as high magnitude-low frequency. This is due to thunderstorms falling on soils that shed much of the rainfall. Other characteristics which influence high magnitude stream flow on a local basis are: lack of vegetation characteristic of saline uplands and extensive areas of rock outcrops which allow for 100 percent runoff.

Stream channels in the planning area are types A and B (Rosgen 1985) at the higher elevations where there is plenty of cobble and bedrock to armor the channels. Type C channels are found in the lower areas where sedimentary geology predominates. Channel stability varies from good to poor with the majority falling in the fair to poor category (USDA Channel Stability Evaluation).

Since the area is located in the upper reaches of the Colorado River Basin, salinity is the one chemical characteristic that is a concern. Table 3-18 lists those streams which have the highest levels of salinity in the area. These streams drain the Rock Springs Uplift. The data in Table 3-18 demonstrates that this area is capable of producing high salinity levels under natural conditions and much accelerated levels under disturbed conditions.

### Monitoring

Since 1976, 27 streams have been sampled to develop a good baseline data set. An effort has been made to reduce the baseline type sampling in favor of site specific monitoring for compliance and/or cause and effect. The intent of this monitoring is to ensure that the BLM complies with the Wyoming DEQ Water Quality Rules and Regulations, Chapter 1 (Wyoming 1990) and Quality Criterion for Water (EPA 1976). Currently, 12 streams are being gauged and sampled on the planning area for a variety of physical and chemical constituents. Jack Morrow and Pacific Creeks are the only streams which are currently being sampled for baseline information.

### Groundwater

The planning area is underlain by quaternary, tertiary, and cretaceous geological systems which provide groundwater in the area. Although much has been documented about groundwater occurrence in the area, the aquifer systems are not well defined because of the sporadic nature of occurrence in each geologic layer.

Some of the geologic stratigraphic units which are known to contain groundwater are Bishop Formation,

Bridger Formation, Laney Shale, Wilkins Peak, and Tipton Shale members of the Green River Formation, main body of the Wasatch Formation, and the Almond and Ericson Formations of the Mesaverde group. A general table for water quality for each can be found in Table 3-19.

Although little has been documented on groundwater recharge in the area, published information alludes to the fact that the following areas can be classified as recharge areas: Rock Springs Uplift, Wind River Front, north flank of the Uinta Mountains; and localized areas recharging the Bishop Conglomerate (Pine Mountain, Little Mountain, and Cedar Mountain) see Map 23.

### Water Depletions

Cities and towns, trona mining, power plants, oil and gas and mineral development activities, and agriculture all utilize water from the Green River and the Sweetwater River and their tributaries. An exception to this would be the town of Superior which relies on water wells for its water.

### Roads and Surface Disturbance

Roads can be responsible for up to 90 percent of sedimentation (Satterlund 1972). The planning area is no exception to this rule since many of the roads, particularly those to the south of I-80, are poorly drained and are bladed to the width of four lanes. The combination of these two practices allows water, sediment, and associated salt to move down drainage ditches and into intermittent or perennial channels thus causing augmented flows and associated erosion and channel incision.

Other problems closely related to roads are powerline roads, some pipelines and old seismic lines which are not water barred or revegetated, and poorly placed or designed well pads. These surface disturbances can create channels down which water will move forming gullies, thus eventually transporting salt and sediment into local drainages. In some instances, pipelines and roads have been located in the inner gorge area of intermittent and ephemeral drainages increasing sedimentation and gullying. Areas where roads are a particular concern include Sage Creek; the area west of Flaming Gorge (east of Sage Creek Mountain, north of the Henrys Fork River); the Red Creek Watershed; east of LaBarge, including the west side of the Little Colorado Desert next to the Green River; and developed oil and gas fields like Table Rock.



## AFFECTED ENVIRONMENT

Irrigation return flows have been recognized in the last couple of years to have drastic effects on the condition of stream channels and fisheries. The result of such actions is that augmented flows to a small drainage will rework the channel by incision. Presently Sculpin Creek, Canyon Creek, Antelope Wash, Long Draw, and parts of the Larson and Prospect Mountain Allotments have these characteristics.

### Riparian

The planning area has many areas where the utilization of forage by livestock and wildlife in the riparian zones has removed the stabilizing feature of the stream and allowed for channel degradation. This action is responsible for increases in non-point source contributions of sediment, salinity and phosphate which regionally are considered to be problems for downstream users.

Non-point source generated phosphate is a more localized problem. It is partially responsible for the eutrophication of Flaming Gorge Reservoir. This affects the oxygen level in the Flaming Gorge and ultimately affects the fisheries. Actions which reduce contributions of phosphate into Flaming Gorge will likely improve the fisheries.

### WILD HORSES

The forefathers of wild horses in this planning area most likely first appeared with the native Americans that traveled through or inhabited southwest Wyoming. White settlers first appeared in the mid-1800s, and horses often escaped or were turned loose on the open range. Many of the local ranchers would manage these herds for their own use. They introduced studs to improve the stock and would gather the horses every year or two for their own use. During World War I, some of the local ranchers had contracts with the U.S. Army to supply

horses for military use and were given remount studs by the Army that were to be turned loose with the herds to improve bloodlines. After World War I, with the advent of trucks and mechanized farm equipment, more horses were released and the herds continued to increase. During World War II, the ranchers lost many of their ranch hands and the horses were left to go wild. After a generation of not being gathered, the horses were very difficult to capture. In the late 1940s and early 1950s, as market prices increased, ranchers and others used airplanes to gather horses.

The types of horses in the planning area are as varied as their background. There are a few large draft horses, many horses reflect Quarterhorse mixture, and some show American Saddle Horse blood, a direct reflection of the main types of studs turned out by ranchers.

In 1959, Public Law 86-234 did not completely eliminate gathering of horses in the area. The ranchers who had legitimate claim to the horses could obtain permits from the State Livestock Board to gather claimed or stray livestock. With the passage of Public Law 92-195 in 1971, all gathering operations were stopped, except those conducted by the BLM, and the BLM assumed management control of the horses. In 1972, wild horse inventories began in the area. Horse population counts, primarily conducted in the month of February, represent the majority of monitoring conducted for horse location and population see Table 3-20. These figures have been arranged by current wild horse management area. The table also contains numbers of horses outside of current management areas. The counts do not contain the estimated 20 percent annual increase due to reproduction in that inventory year.

In 1979, an agreement with the Rock Springs Grazing Association, the International Society for the Protection of Mustangs and Burros, and Wild Horses Yes established a total population of 1,450 wild horses for the Rock

**TABLE 3-18**  
**HIGHEST LEVELS OF SALINITY IN THE GRRA**

Stream	TDS Range (mg/l)
Jack Morrow Creek	500 - 8,000
Pacific Creek	1,000 - 2,000
Salt Wells Creek	2,000 - 7,000
No Name Creek	1,000 - 9,000
Bitter Creek	1,000
Little Bitter Creek	3,000 - 8,000

## AFFECTED ENVIRONMENT

Springs District. This agreement covered all wild horse areas within the Green River Resource Area as well as the Desert Common Wild Horse Area in the Pinedale Resource Area. The 1,450 total horse population was judged to be the optimal management level for monitoring. In 1982, the Bureau accepted this management level for horses through an update of the land use plans for the Sandy and Salt Wells Resource Areas. The herd numbers for each wild horse management area were designated with regard to the agreement, as well as the size and terrain of the herd area.

A March 13, 1981, Order from the District Court of Wyoming (Mountain States Legal Foundation and Rock Springs Grazing Association vs. Cecil Andrus, 275K) required BLM to "remove all wild horses from the check-board grazing lands in the Rock Springs District except that number which the Rock Springs Grazing Asso-

ciation (RSGA) voluntarily agrees to leave in said area" in three herd management areas. The RSGA is a major private landowner in the area. The BLM reviewed the numbers recommended by the RSGA and, through the planning process, based appropriate management levels (AMLs) in the three herd management areas on those numbers. The AMLs reflect the results of an agreement with RSGA.

At present, the planning area contains four wild horse management areas and one interim wild horse management area Map 25. Each area has an implemented management plan with objectives for wild horse management that is interwoven with the appropriate allotment management plans. These plans provide protection, management, and control of the wild horses. The four wild horse management areas are the Divide Basin Wild Horse Herd Management Area (WHHMA), the

**TABLE 3-19**  
**GROUNDWATER OCCURRENCE**

Geologic Subdivision	Groundwater Occurrence	Total Dissolved Solids (mg/l)
Bishop	possibilities fair	150 - 300
Bridger	possibilities poor; yields less than 50 gpm	563 - 914
Laney Shale	possibilities fair; up to 75 gpm	650 - 4,200
Wilkins Peak	possibilities poor; less than 30 gpm	1,690 - 8,000
Tipton Shale	possibilities good; yields 10 - 170 gpm	1,330 and up
Wasatch Formation	possibilities good; yields 1 - 668 gpm	200 - 3,700

White Mountain WHHMA, the Salt Wells Creek WHHMA, and the Adobe Town WHHMA.

The Great Divide Basin management area is located 40 miles east of Rock Springs in the eastern portion of the planning area north of Interstate 80. It encompasses an area from the Rawlins-Rock Springs District boundary west to the Continental Divide. The management level range is 415 to 600 wild horses. The area consists of a total of 778,915 acres of which 73 percent is public, 2 percent is state, and 25 percent is private.

The White Mountain area encompasses an area from Interstate 80 north to the Big Sandy River and from Highway 191 west to the Green River. The management level range is 205 to 300 wild horses. The herd management area consists of a total of 392,649 acres of which 61 percent is public, 1 percent is state, and 38 percent is private.

The Salt Wells Creek area encompasses an area from Highway 191 south of Rock Springs east to the Rock Springs-Rawlins District boundary and south to



## AFFECTED ENVIRONMENT

the Wyoming-Colorado state line. The herd management range is 251 to 365 wild horses. The herd management area consists of a total of 1,193,283 acres of which 61 percent is public, 3 percent is state, and 36 percent is private.

The Adobe Town WHMA is predominantly in the Rawlins District and is situated approximately 70 miles southeast of Rock Springs. The total herd management level for the wild horses is 500 head, with a range of 165 to 235 in the planning area. The herd management area consists of a total of 320,000 acres of which 93 percent is public, 2 percent is state, and 5 percent is private. Of the 320,000 acres, 94,000 acres lie within the planning area.

Each wild horse management area has an implemented management plan which describes the area, resources, horse population, and management objectives for the herd. These plans are on file at the Green River Resource Area office.

The latest wild horse inventory in the planning area was conducted in February 1992 and indicated a population of 1,865 horses. It is expected that the population will be 2,238 by the summer of 1992 if a 20 percent foal crop is realized.

Monitoring has been carried out in each WHMA. The majority of monitoring has been conducted at the allotment level, with emphasis on vegetative conditions. Limited data has been gathered on the horses themselves, but a more extensive monitoring program will be developed for herd condition and objectives established in each herd plan. A summary of current herd area conditions based on analysis of monitoring information is contained in Appendix 9-9.

The South Desert-Figure Four Interim WHMA area (Map 25) encompasses the entire Figure Four Allotment which is located in the extreme northwest corner of the Green River Resource Area, approximately 70 miles from Rock Springs and the South Desert Pasture of the Desert Common Allotment in the Pinedale Resource Area. The herd management level for this herd area was 100 head (75 head in the Figure Four Allotment). In 1988, the Interim Wild Horse Herd Management Area was eliminated as a result of a decision in the Pinedale RMP and an EA covering the Figure Four portion of the herd area. Monitoring data collected over the years detected that the horses no longer occupied the area. The decision to eliminate the herd management area (and to remove all wild horses from the area) was re-evaluated. The re-evaluation determined that a larger area is needed to support a viable and manageable herd. There were 117,534 acres in this herd area, of

which 98 percent were public, 1 percent were private, and 1 percent were state.

In July 1989, horse gathering operations were suspended in the State of Wyoming in reaction to the IBLA decision concerning the State of Nevada and an interest group for horses. This group appealed the basic herd numbers established in the herd management areas within Nevada. The decision to halt in Wyoming was based on requests by the same interest group to evaluate herd management numbers in Wyoming. The Green River Resource Area completed two environmental assessments for numbers inside and outside of the management areas. In March 1990, the decision was made to resume gathering operations on areas outside wild horse areas. As of July 1990, the Interior Board of Land Appeals placed part of the decisions from the EAs for gathering operations in full force and effect.

## WILDERNESS

Eleven wilderness study areas (WSA) are entirely within the planning area and one lies partially within the area: Buffalo Hump, Sand Dunes, Adobe Town, Alkali Draw, South Pinnacles, Alkali Basin-East Sand Dunes, Red Lake, Honeycomb Buttes, Oregon Buttes, White Horse Creek, Devil's Playground-Twin Buttes, and Red Creek Badlands. No other potential wilderness areas have been identified for evaluation in this document.

The wilderness study areas in the planning area (Map 3) were evaluated in two previous wilderness environmental impact statements (USDI 1990a and USDI 1987a). As a result of these analyses, the BLM recommended all of the Oregon Buttes (5,700 acres) and Devils Playground-Twin Buttes (23,841 acres) WSAs as suitable for designation. In addition, 6,080 acres of the 10,300-acre Buffalo Hump WSA; 21,304 acres of the 27,109-acre Sand Dunes WSA; 37,287 acres of the 41,404-acre Honeycomb Buttes WSA; and 4,480 acres of the Adobe Town WSA were recommended as suitable for designation.

The following WSAs were not recommended as suitable for designation: Alkali Draw (16,990 acres), South Pinnacles (10,800 acres), Alkali Basin-East Sand Dunes (12,800 acres), Red Lake (9,515 acres), Whitehorse Creek (4,002 acres), Red Creek Badlands (8,020 acres), part of the Buffalo Hump WSA (4,220 acres), part of the Sand Dunes WSA (5,805 acres), and part of the Honeycomb Buttes WSA (4,117 acres) Table 3-21. All recommendations are pending Congressional decision.

Until Congress acts, these WSAs will be managed under the "Interim Management Policy and Guidelines for Lands Under Wilderness Review" (USDI 1987).

TABLE 3-20  
WILD HORSE POPULATIONS

(As of February of Each Year)

Management Area	Year																				
	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
Inside Wild Horse Herd Management Areas																					
Divide Basin	1166	N O	1541	1930	2181	1311	2262	2188	2227	2171	2485	1767	1346	1040	512	660	612	586	537	626	475
White Mountain	264	--	266	443	618	599	497	498	606	237	236	283	158	176	246	231	211	301	340	242	273
Salt Wells Cr	268	D A	360	408	572	1498	702	764	696	644	307	374	487	334	335	430	419	504	699	614	623
Adobe Town	387	T A	718	410	1076	683	508	879	760	1086	655	944	1093	513	254	278	430	85	162	186	297
Figure 4	-----	No Data	-----		299	94	116	54	91	0	0	4	34	7	0	0	0	0	0	0	0
Outside Wild Horse Herd Management Areas																					
Area South of Figure 4, North of White Mtn.	-----	No Data	-----			663	416	574	502	209	258	261	312	146	115	88	70	82	81	102	120
West of Divide Basin, North of I-80	-----	No Data	-----				326	352	442	452	152	127	107	133	54	0	0	88	137	75	71
West of Salt Wells Creek, South of I-80			15		20		32	11	74	86	52	28	59	44	106	47	33	18	56	26	16

AFFECTED ENVIRONMENT

## AFFECTED ENVIRONMENT

Should Congress designate any of the WSAs (partially or wholly) as wilderness, the management of the designated areas will be for wilderness values in conformance with the Wilderness Act and as described in designation legislation.

Should Congress not designate any area (partially or wholly) as wilderness, the management of the nondesignated areas will be in accordance with the approved Green River RMP. The undesignated areas will lose their identity as WSAs and will be managed along with the adjoining area as prescribed in the approved Green River RMP. Wilderness management plans will be prepared for WSAs designated by Congress as wilderness.

## WILDLIFE

The planning area provides a variety of habitats to accommodate over 350 species of wildlife on the public lands. Other resource activities such as realty, mining, recreation, and grazing affect wildlife habitat beneficially or adversely. The Bureau of Land Management maintains habitat management responsibilities on public lands while the Wyoming Game and Fish Department (WGFD) manages wildlife populations.

Big game species wintering populations include an estimated 170 moose; 1,800 elk; 12,600 mule deer; 45 white-tailed deer; and 51,000 pronghorn antelope. Over 55 percent of the planning area has been identified as crucial big game range. Included in this crucial habitat are fawning and calving areas and winter ranges. Some crucial yearlong habitat has been identified for the unique "Steamboat Mountain-Sand Dunes elk herd." The WGFD manages big game wildlife on a "herd unit" concept. The herd unit boundaries do not generally match BLM resource area boundary lines, making analysis and correlation of resource data and big game population data difficult. The WGFD revises its strategic population numbers for each big game species based on new habitat information, population trends, and recreation demand. The planning area is broken into several complete habitat units established under criterion of 1975, which provided boundaries for wildlife habitat areas.

### Terrestrial Wildlife

#### Deer

Mule deer are distributed over most of the planning area in 7 herd units which occur fully or partially within

the planning area (Map 68). Table 3-22 shows population and harvest data by herd unit.

Economic analyses in this document are based only on the portion of the herd units within the planning area. Current population figures are derived from computer population models which may or may not have good statistical confidence depending on data quality and quantity fed into the program.

Some whitetail deer activity has been recorded along the Green River and near Willow Creek in the Wind River Mountains, but meaningful population estimates are not available.

Increased mule deer activity occurs in winter at the Seedskeadee National Wildlife Refuge and the Green River Breaks near LaBarge because of good cover and ample browse. During late fall, deer move from Bridger National Forest into lower elevations near Prospect Mountain. They winter along major drainages and ridges north of Highway 28 until April when they again move back toward the mountains. Some herds move south into Jack Morrow Creek and the area between Essex Mountain and Tule Butte. Pine, Cedar, and Long canyons offer good winter and spring habitat for several hundred deer, with many remaining there yearlong. Cooper Ridge, Beans Spring, Red Creek Basin, South Baxter Basin, and sagebrush flats along Flaming Gorge are important winter ranges for the South Rock Springs Unit herds. Preliminary data from a recent deer study suggests that Cooper Ridge is a primary winter range for a portion of the South Rock Springs herd unit.

Shrubs furnish nearly 75 percent of the winter diet of deer. The primary winter food species for mule deer in southwest Wyoming are sagebrush, mountain mahogany, rabbitbrush, and bitterbrush. Shrubs growing taller than the average winter snow depth are of importance to deer survival. This makes winter range a limiting factor for deer populations over much of their habitat.

Most deer activity within the planning area is dependent on the availability of water. Studies have shown that in arid regions, in the driest months, deer will seldom move more than a mile to a mile and a half from water. Deer require from 1.0 to 1.5 quarts of water per hundred weight in the winter and from 2 to 3 quarts in the summer. BLM water wells provide water for fall livestock, but the facilities are unavailable to provide water for wildlife during dry summer months.

## AFFECTED ENVIRONMENT

Flowing streams and standing waters tend to dry up during long, hot summers. This concentrates deer activity around those available waters that remain. In an attempt to relieve the pressure on overused water resources and to more evenly distribute deer in unused areas, the Bureau and the Wyoming Game and Fish Department installed 23 wildlife guzzlers throughout the planning area.

### Pronghorn Antelope

Suitable summer antelope habitat is found in most vegetative communities and includes about 4,662,000 acres within the Green River planning area. Six designated antelope herd units are either completely or partly within the planning area (Map 69): Bitter Creek, South Rock Springs, Uinta-Cedar Mountain, West Green River, Sublette, and Red Desert.

The 1988-89 post-harvest wintering population in Wyoming was estimated at 363,150. Nearly 66,000 or about 18 percent of the Wyoming pronghorn population occupies the planning area during various seasons of the year see Table 3-22.

Preferred pronghorn habitat is usually characterized by the presence of summer water and sagebrush in combination with rabbitbrush and antelope bitterbrush. The planning area provides an estimated 3,880,000 acres of this habitat (see Map E). Big sagebrush is the most common species with some ecological niches allowing growth to exceed six feet in height. Field studies indicate little or no pronghorn use in tall sagebrush.

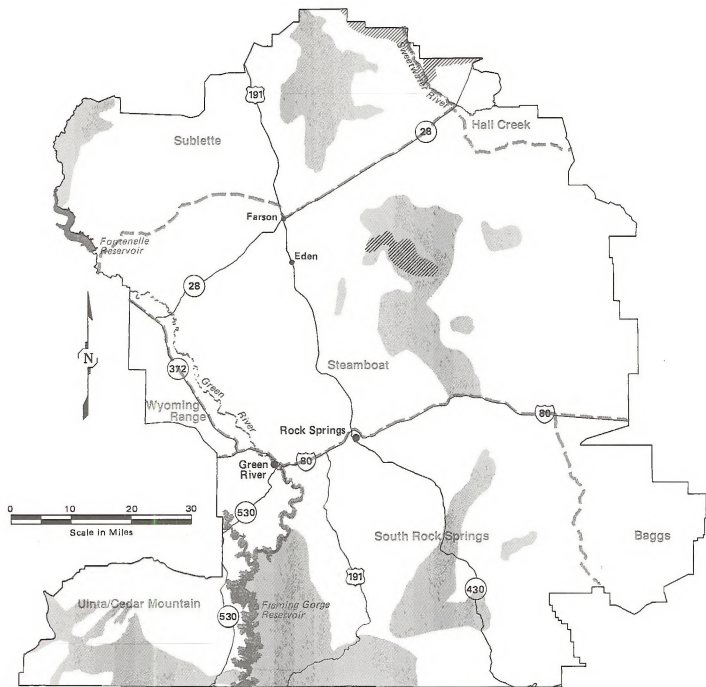
Wyoming big sagebrush habitats dominate the antelope winter ranges in southwest Wyoming. Black sagebrush is found on many ridges and sideslopes, is a highly desirable forage species for both pronghorn and sage grouse. Often black sage is found more closely associated with Sandburg bluegrass and Douglas rabbitbrush than other vegetative communities. Small acreages of silver sage (usually found in higher precipitation zones) exist in the Figure Four Canyon area, Prospect Mountains, and the Wind River foothills. Saltbush communities are critically important as winter habitat, although pronghorn may be found yearlong. Many saltbush communities are in association with greasewood, spiny

TABLE 3-21

### WILDERNESS STUDY AREAS

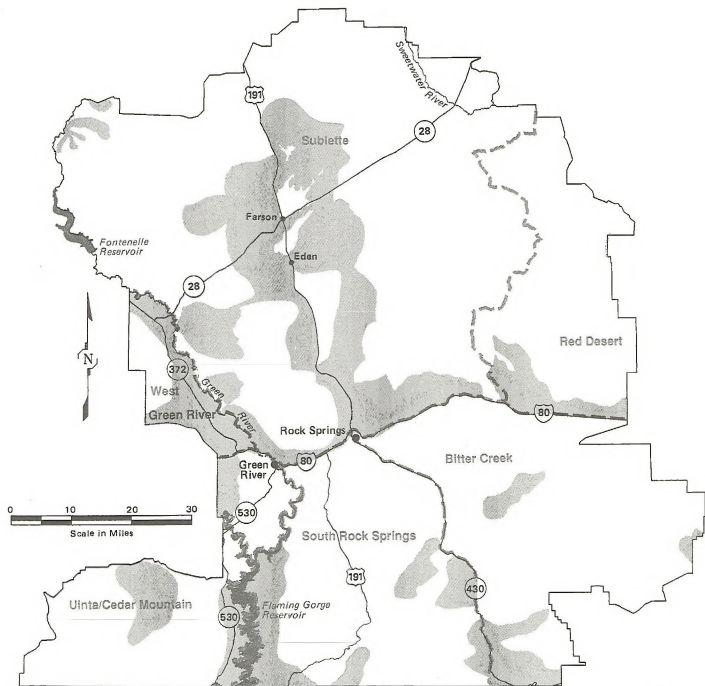
Wilderness Study Area	Public Land Acres in WSA	Public Land Acres Recommended as Suitable
Buffalo Hump	10,300	6,080
Sand Dunes	27,109	21,304
Alkali Draw	16,990	0
South Pinnacles	10,800	0
Alkali Basin-East Sand Dunes	12,800	0
Red Lake	9,515	0
Honeycomb Buttes	41,404	37,287
Oregon Buttes	5,700	5,700
Whitehorse Creek	4,002	0
Devils Playground-Twin Buttes	23,841	23,841
Red Creek Badlands	8,020	0
Adobe Town <sup>1</sup>	53,000	4,480
<b>Total</b>	<b>223,481</b>	<b>98,692</b>



<sup>1</sup> Acres within Green River planning area only.



-  Crucial Winter/Winter Yearlong Range
-  Birthing Area
-  Herd Unit

**Map 68**  
**Deer Habitat**  
 Seasonal Use Areas  
 and Herd Units  
 Green River Planning Area



 Crucial Winter Range  
 Herd Unit

Map 69  
**Antelope Habitat**  
 Seasonal Use Areas  
 And Herd Units  
 Green River Planning Area



## AFFECTED ENVIRONMENT

TABLE 3-22

BIG GAME POPULATION STATUS  
(1988-1989)

Species	Herd Unit	Objective Population	Current Population	Objective Harvest	Current Harvest
Deer	Baggs	18,700	19,100	3,900	3,300
	Hall Creek	5,600	5,407	1,250	996
	South Rock Springs	11,750	10,000	2,760	811
	Steamboat	4,000	3,704	470	312
	Sublette	12,500	37,776	2,500	3,533
	Uinta-Cedar Mountain	7,000	11,000	1,600	1,819
	Wyoming Range	38,000	55,908	5,000	3,918
Antelope	Bitter Creek	11,000	12,100	1,420	1,850
	Red Desert	12,000	11,700	2,200	1,900
	South Rock Springs	4,000	3,900	1,000	825
	Sublette	19,400	32,150	4,150	5,570
	Uinta-Cedar Mountain	5,500	6,840	1,375	1,230
	West Green River	3,000	3,000	750	670
Elk	South Rock Springs	600	850	—	262
	South Wind River	3,300	2,922	—	230
	Steamboat	500	548	—	100
	Uinta-Cedar Mountain	600	600	—	62
Moose	Lander	325	295	—	42
	Sublette	5,500	5,790	—	637
	Uinta-Cedar Mountain	600	520	—	31
	West Green River	*	30-35	—	0

\* - no current objective

hopsage, or shadscale. These plants apparently provide basic carbohydrates, protein, and other nutrients for growth and body maintenance of pronghorn. Over 2 million acres of saltbush/hopsage habitat exists in the planning area (see Map E).

Probably the single most important factor affecting antelope populations is weather. Severe winters with deep, crusted snow and below zero temperatures remove the sick, weak, and aged, and populations decline. As an example of weather-induced population dynamics, severe winter storms in the early 1970s drastically reduced antelope numbers in the planning area. Mortality losses for 1971-72 were: Red Desert-55 percent, Sublette-74 percent, West Green River-46 percent, and South Rock Springs-47 percent.

The availability and distribution of water is probably the most important limiting factor affecting summer

antelope distribution. The water requirements of antelope are met through foraging on succulent plants, consumption of snow, and natural surface water.

Lack of available surface water in some areas influences migration of pronghorn and their season of use on particular ranges. In many areas, pronghorn must rely on plant succulence, rains, some perennial seeps, and human-made water developments to make summer use of otherwise unsuitable habitat. Drought conditions and mild winters during 1987, 1988, 1989, and 1990 have reduced winter mortality, but resulted in significant losses to fawns in some areas. Wildlife and cattle water developments have helped to improve antelope distribution in some local situations, but timely rainfall and availability of natural water are more significant in maintaining a sustained yield of wildlife. Disease and predation have not been documented as significantly affecting local big game populations.

## AFFECTED ENVIRONMENT

Over 1,600 miles of fence affect pronghorn movement in the planning area. Of these, about half are on public land for the purpose of controlling livestock. About 475 miles are highway right-of-way fences, of which 230 miles are woven wire. Woven wire fences form a barrier to antelope movement, as antelope usually cannot pass under these fences because of the narrow space between ground level and the fence bottom. About 43 miles of fence have been identified as causing wildlife conflicts. Fence modifications such as antelope passes and lay-down panels have helped pronghorn cope with fences under ideal conditions.

In 1975, the Wyoming Highway Department began a fencing program on southwest Wyoming highways which continues today. Dimension, design, and placement of these and other new fences are causing some migration problems and inflicting some direct and indirect mortality for big game animals, especially young of the year. The placement of either wooden or wire stays between posts create a very tight fence and prevents wildlife from migrating through fences they cannot jump.

Migration patterns vary considerably from year to year and relate to specific winter ranges, winter severity, snow depth, and migration barriers. The Little Colorado area supports a large resident herd and in addition, a large number of winter migrant pronghorn. The migrant herd summers from Farson to the Wind River Mountain foothills to Jackson. Season change in late September and October moves the animals southward to near Farson and as far south as Rock Springs. Winter range for pronghorn from the Oregon Buttes area is also near Farson and Eden. As fall approaches, these animals move southwest and congregate with other migrant herds in low lying areas east and south of Farson. During spring, pronghorn are seen grazing crested wheatgrass along the AT&T buried line near Farson as they migrate northeasterly toward spring and summer ranges. A Wyoming Game and Fish Department fecal analysis of wintering pronghorn did not indicate antelope use crested wheatgrass during winter. Migratory patterns of pronghorn north of Black Rock are uncertain, although their yearlong residence there is noteworthy. Additional discussion on seasonal ranges, migration patterns, conflicts, and historical observations are available in the Resource Area Office.

### Rocky Mountain Elk

Four elk herd units are designated in the planning area. The South Rock Springs Herd unit and the Steamboat unit are completely within the planning area, while only portions of Uinta-Cedar Mountain and South

Wind River are within the planning area (Map 70). Table 3-22 shows herd unit management objectives.

The Steamboat and Little Mountain elk herds were established from several transplants from the Jackson Hole area. Some of the Steamboat elk migrate south to North and South Table Mountain and winter from Hatcher Mesa to Long Canyon and Pine Canyon. This migration has not been observed since about 1985 probably as a result of mild winters and shallow or no snow. Small resident elk herds are now found along Alkali Creek, Natural Corral, Ten Mile Draw, and other areas. In the winter of 1975-76, nearly 300 elk were observed on the Red Desert near "the pinnacles" and headwaters of Alkali Creek. The Little Mountain and Pine Mountain elk population has been steadily increasing. This population peaked in 1972-73 and has declined since but is still at a level above objective. Disease and predation effects on local elk are not known but appear to be minimal.

Some amount of elk use occurs during severe winters in areas adjacent to the Green River near Bird and Chapel canyons. These animals come from Bridger National Forest near Big Piney. A few elk summer here where they water on the Green River. Numerous resource activities conflict with this area as wildlife winter range, primarily habitat loss due to oil and gas development.

Elk west of Flaming Gorge have had a relatively stable population from 1966 through 1978. Since then the herd gradually increased to a point where they were above objective in both 1988 and 1989. These animals do not seem to be as seriously affected by weather conditions.

Browse from a wide variety of trees and shrubs, and forage from grasses and herbaceous plants form the elk diet. The wide ranging habit of this species does not indicate lack of water to be any serious problem. Fecal studies conducted from 1974 through 1978 show a grazing preference for wheatgrass comprising 63.8 percent of the 74 percent overall grass intake, 3.5 percent of the diet was forbs, and 22.5 percent consisted of shrubs. More than half of the browse was antelope bitterbrush.

### Moose

The moose population is static to slightly increasing as a result of vigorous law enforcement and mild winters. Some calving occurs on tributaries of the Sweetwater River, the upper Big Sandy River, and along the Green

## AFFECTED ENVIRONMENT

River above the Green River Golf Course. Moose calving also occurs in aspen stands and along drainages in the upper Henry's Fork River, both on and off national forest lands (Map 71).

During early winter moose migrate into Blucher Creek, Lander Creek, the lower Sweetwater River, and the Henry's Fork from the forest. They have again become yearlong residents the entire Green River system to below the County Recreation area. Yearlong residence is common in the Sweetwater and both Big and Little Sandy River watersheds see Table 3-22. Good year-long riparian habitat exists from Fontenelle to Big Island, with preferred habitat on Seedsdakee Refuge. During the winters from 1976 through 1985, moose were observed using the lower Big Sandy River from Big Sandy Reservoir upstream.

Moose may also be seen along the Blacks Fork in very low quality habitat south of Blue Point. Population densities between Granger and Green River are very low with occurrence classed as low common to uncommon.

Parts of the upper Sweetwater, the Henry's Fork, and other areas indicate declining moose habitat quality resulting from heavy livestock grazing of woody plants and a decrease in beaver activity. Habitat problems are being recognized by changes in browse composition, lack of vegetative undergrowth, and siltation of beaver ponds and stream pool eddies.

### Bighorn Sheep

Bighorn sheep historically ranged across the planning area as indicated in early accounts by mountain men and settlers. Petroglyph panels in Sugarloaf Basin, White Mountain, Cedar Canyon, and elsewhere depict bighorn sheep as important to plains Indians and they were probably common here at that time.

Habitat requirements of bighorn sheep are similar to other wildlife species occupying the planning area. They prefer broken terrain with little human intrusions and little human activity. Bighorns graze on a wide variety of grasses, sedges, and forbs. Browse species are important foods during fall and winter. In desert or arid regions, where lack of moisture limits grass growth, shrubs and trees are major food items. Bighorns are attracted to and seek out mineral and salt licks during spring and early summer. The species is not well adapted to deep and crusted snow and are forced to winter on the confines of southern exposures or wind-blown slopes near escape terrain. Distribution depends upon available water supplies, predators, and human

disturbance. Suitable bighorn sheep habitat occurs on Little Mountain, Richards Mountain, Pine Mountain, and the Haystacks.

### Mountain Lion

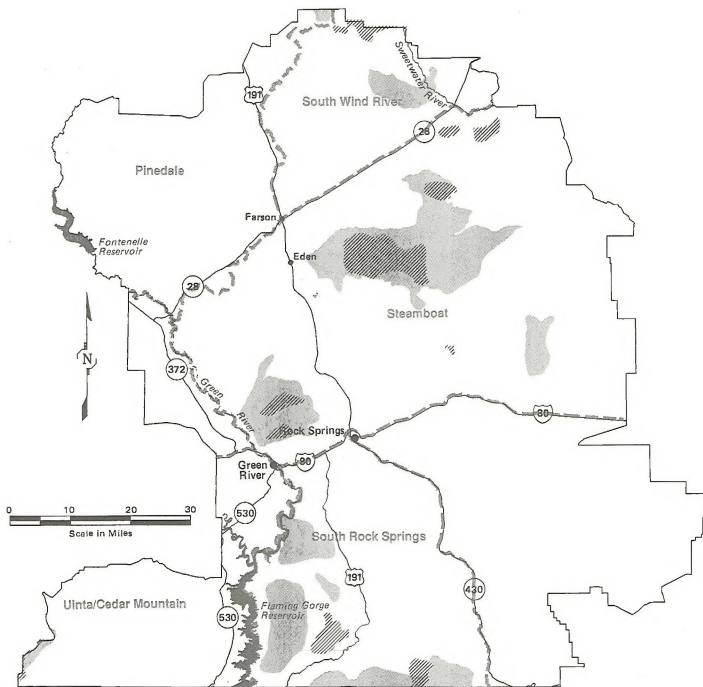
The distribution and abundance of the mountain lion in the planning area is based upon sketchy reports by the public, BLM biologists, and WGFD information. Indications are that distribution is widespread and their population is very limited. There is one hunt area for mountain lion in the entire state. The data represents the statewide hunt and hunter success for mountain lions from 1974 through 1984.

The wide distribution of mountain lion kills and observations over the past several years indicates that this species is presently found throughout much of the planning area within suitable habitat. There have been sightings of mountain lions in the planning area in past years and both legal and illegal harvests of big cats regularly occur.

Mountain lion still reside in the broken juniper and rimrock areas south of Wilkins Peak to the Utah border and in the Haystacks. Cats have been observed on Cooper Ridge, in Adobe Town, on Steamboat Mountain, and in the Wind River foothills. The main habitat component restricting mountain lion populations in the planning area is the absence of large, undisturbed, remote wild areas. Most of the planning area is easily accessible; human presence and continuing activities throughout the lion's habitat will probably limit mountain lion populations.

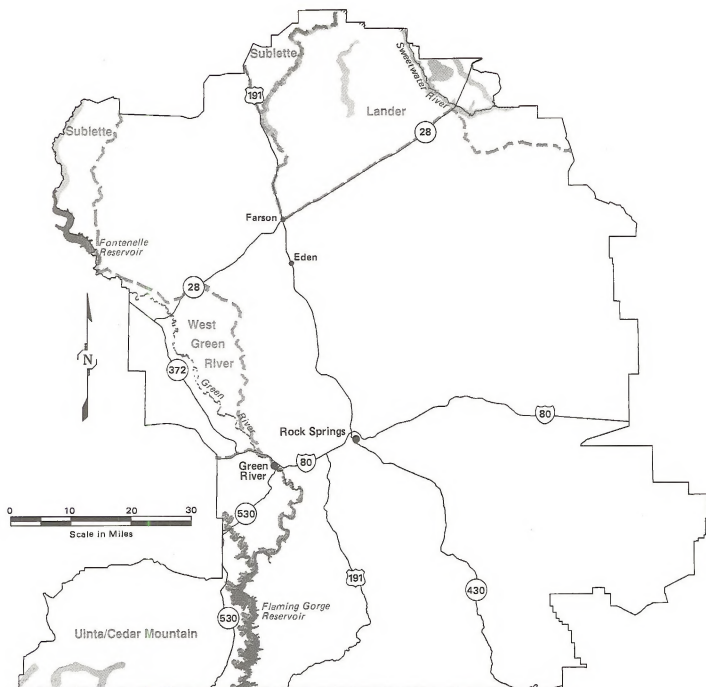
### Black Bear




Suitable bear habitat exists over about 189 square miles of land in the area. Black bear occupy timbered habitats along the Wind River Mountains and near the Colorado border. The BLM has found evidence of bear activity on Little and Pine Mountain. Observations indicate that black bears are somewhat uncommon but do frequent BLM campgrounds. In 1977, litter barrels were removed and bear activity in these areas ceased. Occasionally, black bears are seen or tracks noted along the Sweetwater River and its tributaries and upper reaches of Little and Big Sandy Creeks. Most of the legally harvested bear were taken in the Bridger National Forest. Sport hunting removes a few bear each year but appears to have little effect on population. Urbanization of mountain foothills, off-road vehicle use, and animal damage control activities have nearly eliminated this large predator from public lands.



- Crucial Winter Range
- Birthing Area
- Herd Unit

**Map 70**  
**Elk Habitat**  
 Seasonal Use Areas  
 and Herd Units  
 Green River Planning Area



-  Crucial Winter Range
-  Birthing Area
-  Herd Unit

**Map 71**  
**Moose Habitat**  
 Seasonal Use Areas  
 and Herd Units  
 Green River Planning Area



## AFFECTED ENVIRONMENT

The species is cosmopolitan throughout the west and Wyoming. Populations fluctuate annually, depending on hunting pressure, fur prices, and available prey. This is an almost entirely carnivorous animal relying on animal matter such as jackrabbits, cottontail rabbits, ground squirrels, mice, other rodents, insects, and other small animals for 98 percent of its diet. The coyote is an opportunist in hunting for a meal. The coyote will also take sheep if available.

Relative lack of cover, especially during winter, accounts for fewer coyotes per square mile here than Nebraska or Idaho. Coyote litters increase as population of coyotes decrease or rodent and rabbit populations increase. The animal which survives the first year is a minority, as accidents, traps, shooting, poisons, and starvation take their greatest toll on inexperienced pups.

Trapping is nonselective and the implications on public land users and their pets is self-explanatory. From 1972 to 1978, fourteen pet/trap incidents were reported to the Resource Area office. In no cases were traps marked, nor were they further than 100 feet from roads. Several residents reported coyotes and other wildlife in traps visible from main roads and highways.

Denning is selective method of coyote eradication, although the Humane Society condemns the practice as ruthless and inhumane. Denning is costly and can only be effectively done during late spring when coyote pelts are valueless.

Poisons are currently non-selective with sodium fluoroacetate (compound 1080) used world wide, especially to control rats (a rodenticide). The federal predator control program used it from 1944 through 1974 to control coyotes and rodents. For coyotes, large chunks of meat were laced with the poison and distributed across the fall and wintering ranges of sheep. The poison remains viable for long periods and secondary poisoning is common. This method is not hazardous to humans, but is lethal to carrion eaters such as badgers, foxes, magpies, and golden eagles.

Aerial gunning is now widely used in animal damage control programs. Aircraft costs, primarily helicopter use, make up a large portion of the present budget for the USDA/Animal and Plant Health Inspection Service. The District and resource areas delineate safety zones where animal damage control will not be conducted or the type of control which will be allowed. Aerial gunning is selective and highly effective in flat or open country but less so in heavy brush, wooded areas, or mountains. The gun has several advantages over traps, including range, accuracy, effectiveness, and selectivity.

Other small mammals that may be present in the planning area include jackrabbit, porcupine, raccoon, fox, skunk, and weasel.

## Birds

### Waterfowl

The planning area lies within the Pacific Flyway. The period of occupancy by waterfowl is comparatively short, and most of the waterfowl found here are migratory, short-term occupants. Most of the waterfowl nesting in the Pacific Flyway occurs below 8,500 feet.

Throughout the planning area, the availability of forage, food, and cover are the most significant factors affecting resident waterfowl populations. Nesting habitat is dependent upon cover in riparian areas. These areas are often dependent on beaver pond-building activities.

Every available open water in the planning area, from flowing wells and stock ponds to playa lakes and pot-holes, are used by waterfowl. Shovelers, gadwalls, mallards, pintails, and teal are the most common summer resident species.

Some species only migrate through the area on their way to breeding or nesting grounds farther north or to winter areas farther south. Other species such as the Barrow's goldeneye, are resident for only parts of the year, wintering in western Wyoming. All waterfowl are dependent on ponds, marshes, streams, lakes, and rivers and are found in association with these bodies of water.

Geese follow the same migration pattern as ducks with the exception of spring migration and breeding periods. They migrate into the area by early March and begin establishing nesting territories. These are selected, and mating occurs by mid to late April. At this time of year, geese are common along the Green River, Blacks Fork, and Big Sandy and are not usually found staging on Flaming Gorge or Fontenelle Reservoir. As fall arrives and still waters become ice covered, geese congregate on Eden Reservoir, Fontenelle Reservoir, and the Green River. They remain here, feeding on submergent vegetation or Eden Valley grainfields until ice covers open waters. They move southward into Colorado and Utah to spend the remainder of the winter.

Waterfowl nesting in freshwater lakes of the sand dunes has become nearly nonexistent within the past 10 years. The Red Desert region has historically had fair to



## AFFECTED ENVIRONMENT

good duck production as a product of human-made reservoirs and flowing wells. However, available water and adjacent cover necessary for nesting and escape have been reduced.

Beaver dams and muskrat activity complement waterfowl nesting and brood production. Information on suitable waterfowl use habitat and distribution of waters is on file in the Resource Area Office.

Great Blue Heron which nest atop cottonwood trees on the Green River and Henry's Fork may be found along the Sandy, the Green River, and Antelope Spring Creek. Sandhill cranes are often seen courting and nesting along the Sweetwater River, Ord Creek, Seedskaadee Refuge, and the Big Sandy River during spring.

Nonconsumptive uses of waterfowl in the planning area include scientific wildlife study, photography, and viewing by public land visitors.

Avian and terrestrial predators take some waterfowl and their young but impact to the population is of no great importance. Probably the greatest limiting element presently facing resident and migrant waterfowl is direct loss from open waste water ponds and loss of nesting riparian vegetation along streams and wetlands. Present waterfowl production in the planning area may not equal losses resulting from industrial waste waters. The Migratory Bird Treaty Act (1916), Mexico (1936), and the Migratory Bird Conservation Act (1929) and later Acts and amendments provide for migratory bird protection while they are within boundaries of each country. Little has been done in Wyoming to prevent unnecessary losses outside of hunting. Within the past year, many local operations have complied with the provisions of the Treaties by either removing and reclaiming open pits and ponds or netting the open waters with protective propylene nets.

### Sage Grouse

Population trends in the planning area should be similar to estimated WGFD trends in the southwestern management area. Recent population indicators show a modest declining population trend. Local populations increased as a result of better habitat and forage conditions created by heavier than normal precipitation from 1980 through 1986. The drought conditions from 1987 through the present time probably resulted in an increase chick mortality. This pattern of gradual population increases and sometimes drastic decreases (as indicated by chick survival and young per hen, production trend counts) is typical of sage grouse and other upland birds.

Wherever sagebrush grows, sage grouse can be expected if adequate water (streams, reservoirs, other water developments, guzzlers, etc.) is available. The reproductive characteristics and habits of sage grouse significantly effect its adaptability to human disturbance and habitat alteration. A cycle begins with birds returning to historic "strutting grounds" or breeding complexes in March. Strutting grounds, sometimes referred to as "leks," may be located at a point intermediate between the winter range and summer range, or in some cases the summer and winter range may be the same area. The grounds are usually small, open areas from  $\frac{1}{10}$  to 10 acres in size, but may be as large as 100 acres or more. Snow conditions play a part in the suitability of an area for strutting, as does the amount of vegetation. The strutting ground is an area supporting low, sparse sagebrush or an area denuded of vegetation. Grassy swales, natural and irrigated meadows where grass has been removed, burned areas, cultivated fields adjacent to sagebrush grass rangelands, cleared roadsides, abandoned homesteads, dry lake beds, etc., serve this purpose often with seemingly little attention paid to other land uses.

Strutting ground counts have been conducted by the WGFD for many years. The results indicate that in 1968 there were approximately 133 active strutting grounds located within and adjacent to the planning area. Population estimates for sage grouse are currently unavailable, but these birds were considered abundant in their preferred habitat statewide in the mid-1980s (Map 72). Brooding habitat is also an important aspect of sage grouse habitat selection. Broods need appropriate food in addition to cover.

Peak of the breeding season is early to mid-April when up to 200 birds may congregate on a single strutting ground. Birds can be active in courtship displays during darkness until sunrise. On overcast or foggy days, strutting grounds may remain active until mid-morning. Strutting can take place all night during full moon periods. Some wintering areas have been identified but long-term trends of use have not established area designation. An estimated 15 to 20 percent of the strutting grounds are probably identified.

Historic and long-term information on sage grouse nesting indicates that 80-85 percent of nesting occurs within a 2-mile radius of strutting grounds. Recent radiotelemetry data gathered by Rocky Mountain Energy biologists show that some grouse move up to 11 miles to nest, while most range in the mile to four mile distance.

## AFFECTED ENVIRONMENT

Chukar partridge, blue grouse, and ruffed grouse are also present in the planning area. Detailed habitat descriptions are on file in the Resource Area Office.

### Raptors

There are 27 species of hawks, eagles, and owls either nesting, thought to nest, or have the potential of nesting in the planning area. Other species are either wintering populations, migrants, or possible migrants. The bald eagle and the peregrine falcon are federally classified as endangered species and require biological assessments of activities which may jeopardize or destroy these species or their critical habitats. The BLM has identified the bald eagle, peregrine falcon, ferruginous hawk, prairie falcon, osprey, and golden eagle, as raptors of high priority and has effected conservation and habitat criteria for management. The burrowing owl is state listed as a species in the "rare" abundance category with a biological status designation of "I," indicating declining populations and/or habitat conditions or indicators of such throughout all or a part of their range.

Approximately 70 percent of the planning area has been surveyed for nesting raptors. About 40 percent of the planning area was surveyed for "special habitat features" in 1979 with most potential cliff-nesting habitat identified. A 1980-1981 raptor inventory was conducted within the Rock Springs Known Recoverable Coal Resource Area by BLM biologists and survey crews to satisfy coal leasing suitability criterion. Raptor inventories have not been completed on all potential habitats in the planning area. Raptor studies are currently driven by specific development projects and data are collected to determine raptor management conflicts (Map 73).

Many of the more than 1,600 known raptor nests occur on hilltops, low cliffs, and rock escarpments found within the sagebrush steppe community. Forage here provides winter sustenance as crucial winter range for elk, deer, and pronghorn. Wyoming big sagebrush is extremely important to winter survival of resident wildlife because it is usually the only plant available above the snow and provides valuable cover. Maintenance and management of this habitat component is of primary importance.

Raptor species that are commonly seen in the planning area include prairie falcon, American kestrel, ferruginous hawk, red-tailed hawk, Swainson's hawk, northern harrier, raven, golden eagle, and great-horned owl.

Prairie falcons nest on cliffs, ranging from low rock outcroppings to tall vertical cliffs (e.g., Rock Springs

Uplift, Steamboat Mountain). Prairie falcon feed on cottontail rabbits, prairie dogs, horned larks, snakes, and ground squirrels.

American kestrels nest in varied environments such as dead snags, clay streambanks, and rimrock. Their diet includes insects, small birds, and small mammals.

Swainson's hawk nest on dry plains, open foothills, open forest, sparse trees, and riverbottoms (e.g., the Green River, Little Sandy River, and wood lots). Their diet includes rabbits, other small mammals, grasshoppers, and birds.

The ferruginous hawk nest on low cliffs, buttes, trees, on the ground, and artificial nesting platforms. Their diet consists primarily of rodents.

The red-tailed hawk prefers riparian zones and timbered areas for nesting. Their diet includes cottontails, jackrabbits, rodents, reptiles, and birds.

The northern harrier (or marsh hawk) commonly nest on the ground, often in dense vegetation. Their diet consists primarily of rodents, amphibians, reptiles, and other birds.

Golden eagle nest on cliffs, ledges, and pinnacles that provide a view of the area. Their diet includes rabbits, rodents, and carrion.

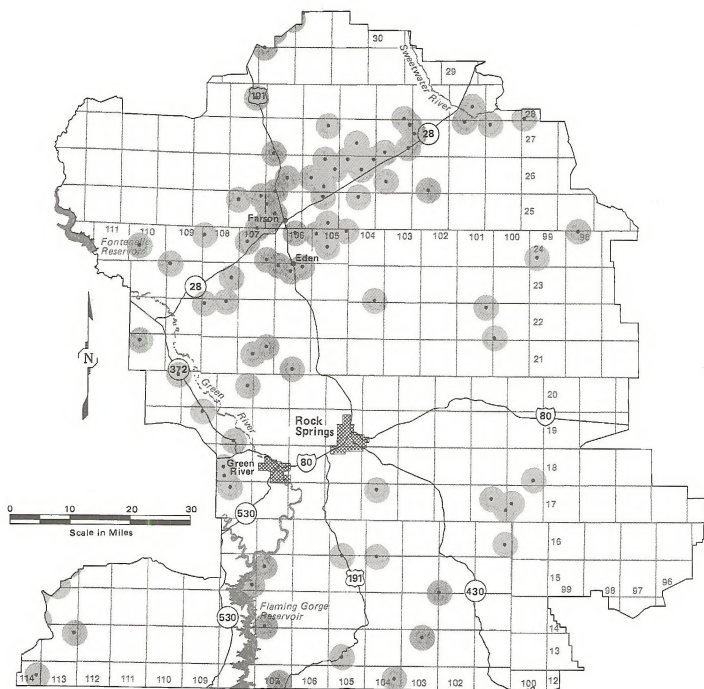
Great-horned owls nest in cliff holes, rock crevices, and trees. Their diet includes small mammals and juvenile prairie falcons.

### Aquatic Wildlife and Habitat

#### Fisheries

Inventories and studies indicate that fish inhabit most streams of the planning area. The mountain sucker is the most common and widespread species, with flannelmouth sucker, speckled dace, mottled sculpin, and fathead minnow also being common. Most sampling has concentrated on areas where cool water species, especially trout, may be found. Because of this, distribution and abundance of fish species may not be entirely accurate for standing waters and warm water streams.

Several rare or sensitive fish species have been reported in the planning area. Colorado River cutthroat trout were recently documented in Upper Red Creek, Trout Creek, and Currant Creek.

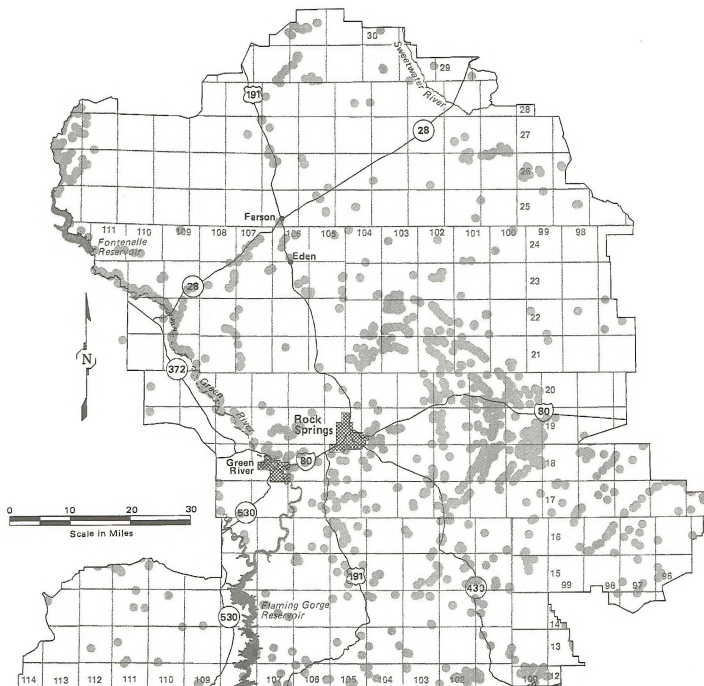


• Lek

● Buffer Zone

NOTE: Entire Resource Area has not been inventoried. For more information, contact the Green River Resource Area Office

Map 72  
Sage Grouse Leks  
and Buffer Zones  
Green River Planning Area



● Nest Site

Map 73  
**Raptor Habitat**  
 Green River Planning Area

## AFFECTED ENVIRONMENT

Mottled sculpin and speckled and longnose dace are indicator fish species of good water quality and a more stable stream habitat. In many cases, these fish and trout species are more common near the headwaters of streams and creeks where sedimentation and/or siltation are not as significant as further downstream.

There are 32 species of fish known to occur in the waters of the planning area. Five species of trout, kokanee salmon, and whitefish provide recreation fishing on public lands. Flannelmouth suckers and carp

provide a recreation resource for archers during spring and summer. Nongame fish, their eggs, and fry also provide a forage source for game fish and other wildlife.

Three species are considered sensitive by the State of Wyoming: the Colorado River cutthroat trout, the roundtail chub, and the bluehead sucker. These species are native to the Green River drainage, but because of river and stream impoundments and other habitat losses, the populations of these species are low see Table 3-23.

TABLE 3-23

### STREAMS WITHIN THE RESOURCE AREA HAVING SENSITIVE FISH

Streams	Sensitive Fish
Big Sandy River	Roundtail Chub, Bluehead Sucker
Little Sandy River	Colorado River Cutthroat Trout
Green River	Roundtail Chub, Bluehead Sucker
Blacks Fork River	Bluehead Sucker
Currant Creek	Colorado River Cutthroat Trout
Red Creek (upper reaches)	Colorado River Cutthroat Trout
Trout Creek	Colorado River Cutthroat Trout
Sculpin Creek	Colorado River Cutthroat Trout

There is little data available to reasonably estimate total game or nongame fish populations in the planning area. Population estimates for Flaming Gorge Reservoir alone would skew data for the rest of the area.

Based on electrofishing samples conducted by the WGFD, typical trout populations on the upper reaches of most streams range from 600 to 3,500 fish per mile. Typical trout populations in the lower reaches of these streams range from 0 to 500 per mile. Brook trout is the most prevalent of the species occurring in most streams near the mountains. Rainbow and brown trout species are most common in faster moving, lower reaches of many streams.

There are more serious data gaps associated with the aquatic wildlife and wetland/riparian resources within the planning area than exists with the terrestrial wildlife resource. Although there have been quite a number of fish collection studies to determine species composition in many streams in the planning area (particularly the Green River, both pre-and post-impoundment studies), a data gap exists for other parts of the planning area. Population studies of the fishery resource throughout

the planning area are essentially nonexistent. The population levels of fish, both game and nongame, in the network of streams are needed to help determine the significance of specific streams and to assist in making management decisions.

Instream flows and instream flow requirements for aquatic species are also areas where data gaps exist. Other than making ocular estimation about stream flows for various times throughout the year, there are no currently reliable instream flow data. Instream flow figures for streams throughout the planning area and flow requirements for fish species should be matched to help determine management strategies aimed at maintaining existing populations, expanding populations, or indicating areas where the best potential exists through habitat improvement to manage the aquatic resource.

Aquatic macroinvertebrate information is an excellent and proven way to monitor the health and trends of a stream. No data exist at present on any stream in the planning area. A study has recently begun on Currant Creek as part of a management effort to restore the habitat for the Colorado River cutthroat trout.



## AFFECTED ENVIRONMENT

### Fisheries Habitat Requirements

Fish and other aquatic animals have specific environmental requirements. General recommendations on water quality for the maintenance of life functions of a mixed fish fauna include dissolved oxygen (not less than 5 mg/l), pH (6.7 to 8.6), carbon dioxide (not over 3 mg/l), conductivity (at 25°C., 150-500 mhos, with a maximum of 1,000-2,000 mhos permissible in western alkaline areas), ammonia (not over 1.5 mg/l), temperature (varies by species), and stream flow.

Two constituents shown to cause widespread fishery impairments are total suspended solids and heavy metals. There is considerable uncertainty about the proper criteria for these constituents necessary to protect fisheries in the planning area. Additional studies are needed to determine the magnitude of the impairment at which fish are adversely affected. Any activity which increases total suspended solids, ammonia, heavy metals, or phosphates or reduces dissolved oxygen in the streams of the planning area will adversely affect water quality and fish habitat.

### Stream Habitat

There are approximately 465 miles of intermittent streams and 1,132 miles of perennial streams (including the Green River) in the planning area. Under BLM-administered surface and mineral estate, there are 412 miles of perennial stream and 256 miles of intermittent (excluding the Green River). There are 109 miles of stream under "split estate" (excluding the Green River) on which BLM would have responsibility during a BLM-permitted action. Many more miles than this exist that are classified as ephemeral and are not included in this document. Stream channel stability on the inventoried sections was rated from 1 to 5 (excellent to poor, respectively) see Table 3-24.

TABLE 3-24

#### STREAM CHANNEL STABILITY RATING

CLASS	MILES
1	0
2	35.4
3	102.28
4	330.18
5	112.86
Rated	580.72
Not Rated	1,017.24
Grand Total	1,597.96

Over half of the inventoried streams indicate the potential to significantly improve stream stability through various management practices. Detailed information on particular stream reaches and management recommendations is available in the Resource Area Office.

Based on the public land stream miles surveyed, public lands within the planning area average a low-fair stream channel stability rating with an 8.3 percent average improvement potential to a high-fair overall condition. Since 10 percent to 20 percent improvement potential delineates a "key area" for management improvement efforts, it can be concluded that the entire planning area is, on the average, almost a key area for improvement of stream channel stability. Table 3-25 lists key areas with at least some sections with a high improvement potential.

A major limiting factor to game fisheries habitat is the low availability of spawning habitat. This is primarily due to stream sedimentation, which in turn relates to channel stability. Spawning habitat typically consists of gravelly, rocky stream bottoms with stable banks which prevent or reduce the sediment load entering the stream. Sedimentation destroys spawning habitat. Only 16.7 percent of the stream miles surveyed had good to fair spawning habitat. The remaining 83.3 percent falls into a poor, virtually none, or not significant category. Protection and improvement of spawning habitat throughout the area should therefore be one of the main aquatic program emphases.

### Riparian Habitat

Less than 3 percent of the area is wetland or riparian. Of this habitat type, the BLM has management responsibilities on only about 35 percent of the acreage. Nearly 70 percent of the wildlife species occur in these small but crucial habitats. Moose, Swainson's hawk, raccoon, red fox, striped skunk, and most waterfowl species typify wildlife found in the wetland/riparian areas. From 40 to 50 bald eagles winter on streams in the planning area annually. Many endangered or sensitive plant and animal species such as whooping crane, bald eagle, merlin, and meadow pussytoes are indigenous to wetlands. Unfortunately, available water and cover, and the high forage productivity of riparian areas encourage high intensities of livestock and wildlife use which may result in degradation of these habitats.

Streams and wetlands in good habitat condition provide a niche for beaver, muskrat, mink, and otter. Streams with little vegetative diversity offer lower furbearer production with fewer species represented. Beaver have proven to be a most valuable wildlife resource in stream



## AFFECTED ENVIRONMENT

habitats. On tributaries, they prevent flooding, slow the rate of erosion, and clean the water. Trapped silt often results in vegetative production of willows, sedges, rushes, and cattails. Many of the wet meadows found in the planning area are the product of ancient beaver activity.

TABLE 3-25

### STREAMS WITH IMPROVEMENT POTENTIAL

CREEK	MILES
Alkali Creek	1.29
Blucher Creek	1.27
Big Sandy River	22.21
Bitter Creek	6.52
Canyon Creek	0.69
Cottonwood Creek	1.96
Currant Creek	2.65
Dan's Creek	4.28
East Fork Salt Wells Creek	0.98
East Fork Sweetwater River	1.54
Fish Creek	1.58
Gap Creek	1.97
Gold Creek	0.43
Henry's Fork	5.93
Jack Morrow Creek	19.19
Little Bitter Creek	6.84
Little Sandy Creek	28.41
North Fork Vermillion Creek	3.00
Ord Creek	0.30
Pacific Creek	24.27
Red Creek	11.23
Salt Wells Creek	28.58
Spring Creek	4.21
Sweetwater River	7.25
West Spring Creek	1.95

Winter finds bald eagles along major waterways, although none are known to nest here. Bald eagles are found primarily along rivers and inland lakes where their nests are usually located in large coniferous or deciduous trees. In the Wyoming Basin physiographic region which describes the planning area, streams and rivers with trees are not common. Currently, the only known active bald eagle nesting sites are on the Green River above the Big Sandy confluence. There are potential nesting opportunities along Flaming Gorge Reservoir, the Henry's Fork River, and other waterways. The pioneering trend for bald eagle nesting began in the upper Green River system and activity moved slowly downstream to an island just outside the planning area in 1985. No raptor inventories were conducted on the river until 1990, when an active bald eagle nest was discovered within Seedskaadee National Wildlife Refuge.

Bald eagles are classed as partly migratory. Bald eagles from the northern states and Canada tend to migrate greater distances than do local eagles. About the second week of October, bald eagles begin arriving on the Green River. This coincides with the kokanee salmon and brown trout run which is probably a primary source of autumn food. By Thanksgiving, bald eagles can be found on the Big Sandy and Little Sandy Rivers, in Eden Valley, and along the Black's Fork and Henry's Fork rivers. The bald eagle is a winter resident along the Green River and Flaming Gorge Reservoir. Few studies have been conducted to locate winter roosts in the planning area; however, aspen and conifers along headwaters of Currant Creek, conifers on Black Mountain, and other areas may be suitable for roosting. A known roost and activity area is in the Henry's Fork at the confluence of Antelope Creek, primarily on private land; as many as 11 bald eagles may be seen in mid-winter.

In the past four years, whooping cranes have found wetlands in the Farson area suitable for summer habitat, though none are known to nest in the planning area. Peregrine falcon nested on the Green River as late as 1967, but they are now only casual migrants on their way to and from the Greater Yellowstone Ecosystem.

There is a continuing effort to map prairie dog colonies and search for the black-footed ferret. Dozens of ferret sightings have been made by reliable sources in a variety of habitats. Night searches and daytime hole-to-hole examinations on about 3 percent of the planning area have not yet revealed a black-footed ferret. Populations of black-footed ferrets (if any) are undetermined in the planning area. There is historical documentation of presence of ferrets to as late as 1963 when a ferret and kits were commonly seen by several persons in the

### Threatened, Endangered, and Candidate Species

Six federally listed endangered species and one state "sensitive" wildlife species inhabit or have inhabited the planning area. Endangered species include the bald eagle, whooping crane, peregrine falcon, gray wolf, grizzly bear, and black-footed ferret. The Colorado River cutthroat trout is a state listed "sensitive" fish species and a Category 2 candidate for listing as federally threatened.

## AFFECTED ENVIRONMENT

southwest part of Eden Valley. Other areas where ferrets are presumed to have occurred are Sublette Flats, Seedskaadee Refuge, and the Red Desert. Potential areas of ferret habitat can be delineated due to their association with prairie dogs and prairie dog colonies. Researchers have concluded that the black-footed ferret has never been very abundant based upon archaeological and historical evidence.

Colorado River cutthroat trout exist in Currant Creek, Trout Creek, the upper reaches of the Red Creek drainage, and possibly Sculpin Creek and the Little Sandy River.

## SPECIAL MANAGEMENT AREAS

Existing and proposed ACECs and other areas requiring special management are described in alphabetical order. Table 3-26 shows surface and mineral ownership in existing ACECs. Table 3-27 shows surface and mineral ownership in proposed special management areas.

**TABLE 3-26**

**OWNERSHIP IN EXISTING ACECS**

	Cedar Canyon	Greater Sand Dunes	Natural Corals	Oregon Buttes	Pine Springs	Red Creek	White Mountain
Federal Surface/Federal Minerals	1,910	38,010	1,115	3,450	90	55,560	20
Federal Surface/State Minerals	640	640	0	0	0	320	0
Federal Surface/Private Minerals	0	0	0	0	0	0	0
State Surface/Federal Minerals	0	0	0	0	0	0	0
State Surface/State Minerals	0	1,920	0	0	0	7,900	0
State Surface/Private Minerals	0	0	0	0	0	0	0
Private Surface/Federal Minerals	0	320	158	0	0	3,430	0
Private Surface/Private Minerals	2,700	750	1,262	0	0	740	0
<b>Total Federal Surface</b> 2,550	<b>38,650</b>	<b>1,115</b>	<b>3,450</b>	<b>905</b>	<b>5,880</b>	<b>20</b>	
<b>Total State Surface</b>	<b>0</b>	<b>1,920</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7,900</b>	<b>0</b>
<b>Total Private Surface</b>	<b>2,700</b>	<b>1,070</b>	<b>1,420</b>	<b>0</b>	<b>0</b>	<b>4,170</b>	<b>0</b>
<b>TOTAL SURFACE ACREAGE</b>	<b>5,250</b>	<b>41,640</b>	<b>2,535</b>	<b>3,450</b>	<b>90</b>	<b>67,950</b>	<b>20</b>

### Candidate Plant Species

ACEC designation is being proposed for four of the candidate plant species (*Arabis pusilla*, *Astragalus proimanthus*, *Descurainia torulosa*, and *Thelesperma pubescens*). A description of these species and their habitat requirements can be found in the inclusive Candidate Plant section earlier in this chapter.

### Cedar Canyon ACEC

The Cedar Canyon ACEC was designated in April 1982, and published in the *Federal Register* on June 30, 1982. A management plan was prepared and approved February 4, 1983. The purpose of the ACEC was to provide special management attention to a unique group of resource values. Specifically, to protect and prevent

TABLE 3-27

## OWNERSHIP IN PROPOSED SPECIAL MANAGEMENT AREAS

	Candidate Plants	Candidate Plants Modified ACEC	Currant Creek/ Sage Creek	Monument Valley	Pine Springs & Expansion Area	Red Desert Watershed Area (Big)	Red Desert Watershed Area (Modified)	South Pass Historic Landscape (Large)	South Pass Historic Landscape (Modified)	Steamboat	Tri-State (Modified)	Tri-State (Pref. Alt.)
Federal Surface/ Federal Minerals	38,650	440	74,700	60,100	5,390	462,690	336,980	86,800	49,860	43,010	288,450	130,260
Federal Surface/ State Minerals	0	0	1,200	4,200	640	19,240	4,080	740	470	4,720	1,520	
Federal Surface/ Private Minerals	—	0	—	—	—	—	—	—	0	—	—	0
State Surface/ Federal Minerals	—	0	230	—	—	1,400	1,400	—	260	—	260	230
State Surface/ State Minerals	2,850	30	8,490	630	—	16,950	16,030	2,890	3,360	2,820	30,110	16,390
State Surface/ Private Minerals	—	0	—	—	—	—	—	—	0	—	—	0
Federal Surface/ Federal Minerals	3,780	6	680	—	—	1,600	1,280	3,040	2,500	910	6,210	4,110
Private Surface/ Private Minerals	2,620	4	22,020	16,780	—	143,690	670	490	2,780	1,320	25,050	22,760
<b>TOTAL FEDERAL SURFACE</b>	<b>38,650</b>	<b>440</b>	<b>75,900</b>	<b>64,300</b>	<b>6,030</b>	<b>481,930</b>	<b>341,060</b>	<b>87,540</b>	<b>50,330</b>	<b>43,010</b>	<b>293,170</b>	<b>131,780</b>
<b>TOTAL STATE SURFACE</b>	<b>2,850</b>	<b>30</b>	<b>8,720</b>	<b>630</b>	<b>0</b>	<b>18,350</b>	<b>17,430</b>	<b>2,890</b>	<b>3,620</b>	<b>2,820</b>	<b>30,370</b>	<b>38,270</b>
<b>TOTAL PRIVATE SURFACE</b>	<b>6,400</b>	<b>10</b>	<b>22,700</b>	<b>16,780</b>	<b>0</b>	<b>145,290</b>	<b>1,950</b>	<b>3,530</b>	<b>5,280</b>	<b>2,230</b>	<b>31,260</b>	<b>26,870</b>
<b>TOTAL SURFACE ACREAGE</b>	<b>47,900</b>	<b>480</b>	<b>107,320</b>	<b>81,710</b>	<b>6,030</b>	<b>645,570</b>	<b>360,440</b>	<b>93,960</b>	<b>59,230</b>	<b>48,060</b>	<b>354,800</b>	<b>196,920</b>

AFFECTED ENVIRONMENT

## AFFECTED ENVIRONMENT

irreparable damage to prehistoric cultural values (petroglyph panels and indian campsites), visual aesthetics, and critical wildlife habitat. These values were being threatened or potentially so, by off-road vehicle use, indiscriminate recreation, and mineral development (oil and gas).

Cedar Canyon contains an extensive rock art site that probably is related to the Plains Indian culture, specifically Shoshone. These petroglyphs probably date to the late prehistoric and White contact period. The panel of incised figures include stick figures and geometric designs which presumably have some symbolic meaning. Additionally, Cedar Canyon contains valuable raptor habitat and some key big game habitat.

In February 1983, a management plan for the Cedar Canyon ACEC was completed and approved. This plan defined the basic terms and conditions for management and use of the area to ensure that necessary protective management will be applied. Oil and gas development is not precluded as long as the development within the area is in accord with the special management requirements.

The ACEC encompasses 2,550 acres all within T. 22 N., R. 103 W. The extensive rock art and the prehistoric Indian culture, specifically Shoshone, found in this area were values initially considered most environmentally important and fragile. In 1978, 240 acres were nominated to the National Register of Historic Places (NRHP). The Keeper of the Register determined the site to be eligible. The legal location of the Eligible National Register Site (ENRS) is the NE $\frac{1}{4}$ , and E $\frac{1}{2}$  of the NW $\frac{1}{4}$  of section 18, T. 22 N., R. 103 W.

The ACEC is within the current Coal Potential Area, but no coal leases cover the area. The ACEC is not within areas marked as Unsuitable for Coal Leasing as shown in the Big Sandy Management Framework Plan, summarized in the "Wyoming Land Use Decisions (Coal) for the Big Sandy Area."

There are five oil and gas leases within the ACEC. The ACEC is within an area that has been determined to have high potential for the occurrence of hydrocarbons. It also has high potential for development of hydrocarbons within the next 20 years. Nine producing and 7 abandoned wells have been drilled within the ACEC. Within one mile of the ACEC boundary, 15 producing and 10 abandoned wells have been drilled. Of the 15 producing wells, 5 have been abandoned. Production has been established in the Frontier and Dakota formations. The Wyoming Oil and Gas Commission has established a 320-acre spacing for the area covering the

Cedar Canyon ACEC. All but 4 of the 320-acre spacings contain a gas well or an abandoned well that has tested the Dakota and Frontier Formations. The south half of sections 7 and 10 and all of section 15 are the only sections with no well tests and are thus potential sites for future activity see Table 3-12.

Numerous rights-of-way associated with oil and gas production exist in the ACEC with more expected in the future as development continues. Development occurs on both public and private lands within the ACEC.

There are 7 gas pipelines and 3 road rights-of-way present within the ACEC totaling approximately 8.3 miles of linear area or 52 acres.

The Cedar Canyon ACEC is entirely within the Rock Springs Allotment which has authorized year-long use for cattle, sheep, and horses. In the immediate area, grazing occurs in the summer and winter. The allotment is currently in an M (maintain) category with satisfactory management.

Cedar Canyon is a result of significant erosion over a long duration. A resistant sandstone cap lies atop softer shales and mudstone, providing unequal weathering of sedimentary rock. Escarpments rise 100 feet or more above shale plateaus and rolling sand hummocks. Soils continually erode downslope toward the canyon's mouth resulting in lost soil horizons. Sediments are generally fine sandy loams, moderately high in pH (7.5 to 8.5) with good drainage. Some clay loams and sandy clay loams can be found in the valley floor. The soils are generally unstable and susceptible to erosion from any human influence.

Raptor inventories of the area have been conducted by the University of Wyoming Wildlife Cooperative Unit. There are 24 raptor nests considered active within the current boundaries of the ACEC see Table 3-28.

TABLE 3-28

### ACTIVE RAPTOR NESTS IN THE CEDAR CANYON ACEC

Prairie falcon	10
Golden eagle	6
Ferruginous hawk	3
Red-tailed hawk	4
Great-horned owl	1
Total	24

## AFFECTED ENVIRONMENT

The canyon complex is still considered crucial big game winter range for deer and elk. With mild winters over the past 5 years, the importance of the area as crucial winter range has not been realized. Historical information indicates between 450 and 750 deer will use the canyons in normal to severe winters. Up to 40 elk have used Cedar Canyon and Long Canyon in the winter.

Big game browse condition is fair to poor. The long-term drought conditions have compounded problems with browse production and use. Five wildlife watering guzzlers were constructed in Cedar Canyon and Pine Canyon in 1983 and are regularly being used by deer.

Since preparation of the original ACEC Plan (1983), gas field development has impacted big game use and forage. Road building and pipeline construction have created more surface disturbance than the drill pads. Winter stress is the same regardless of the disturbance (a pumper, a condensate truck, or a roughneck going to work). The access road and drill pad to Luff well 3-8 in SE¼ section 8, T. 22 N., R. 103 W., were reclaimed by BLM through reseeding grass and replanting tree species in disturbed sites from 1984 through 1988. Restoration of disturbed land in crucial habitats is important in offsetting energy impacts.

Cedar Canyon has been a popular attraction to recreationists for many years. Hiking, picnicking, and big game hunting are recreational pursuits common to the area. The varied plant and animal life found in this rugged area add to the recreational experience. Overnight camping and occasional parties took place at the petroglyphs in Section 18 in past years. The area currently receives use by several school groups each spring and fall for field trips where they learn about the various resources located in this ACEC.

### Greater Sand Dunes ACEC

The ACEC was designated to protect the geologic, cultural, and wildlife values. The Sand Dunes are part of the larger Killpecker dune field, one of the largest active dune fields in North America. The Killpecker dune field encompasses approximately 109,000 acres extending 55 miles east from the Green River Basin across the Continental Divide into the Great Divide Basin. In 1982, the Greater Sand Dunes (including Boar's Tusk) was designated an ACEC. The ACEC is comprised of an estimated 41,640 acres (approximately 38 percent of the Killpecker dune field) see Table 3-26.

The ACEC is unique to the Wyoming Basin and contains values that are "geologically, aesthetically and

biologically interesting" (McGrew, et al. 1974). In addition, the ACEC includes prehistoric and historic values, diverse wildlife use, high recreation use that has the potential of increasing significantly, and high oil and gas values.

A management plan was completed for the Greater Sand Dunes ACEC in 1983, but is no longer current. For example, the Final Wilderness EIS (USDI 1990b) specified that the areas (Buffalo Hump and Sand Dunes) recommended as suitable for wilderness would be closed to motorized vehicle travel. This is contrary to the provisions of the Off-Road Vehicle Implementation Plan (1983) and the Greater Sand Dunes ACEC Management Plan (1983). Also, the level of oil and gas development in the eastern half of the ACEC is considered to be in conflict with the intended preservation and protection objectives of the designated ACEC.

The Big Sandy MFP identified continued oil and gas development as acceptable, provided "protection of the natural values of the Greater Sand Dunes are maintained through its designation as an ACEC." The MFP specified that the protection would be provided through protective stipulations, or in some cases through administrative closure to limit impacts associated with mineral development.

When the 1983 plan was prepared, there were 10 producing gas wells in the ACEC, 2 of which were in the Sand Dunes WSA. This level of development was considered acceptable in 1983 and it met the ACEC objectives.

Presently, there are 18 producing gas wells within the ACEC, 1 of which is inside the Sand Dunes WSA. This is an 80 percent increase in the total number of producing wells. Also, industry is interested in developing this area further. To remain consistent with the purpose and intent of the ACEC, clear and specific management direction is needed on whether further oil and gas development will be allowed within the ACEC, and if so, where and at what level.

A proposal to designate "Boar's Tusk/Killpecker Dune Field" as a National Natural Landmark (McGrew, et al. 1974; Knight, et al. 1976) was received by the National Park Service in 1979. The Park Service has asked that consideration for this National Natural Landmark resource be given by the BLM in authorizations within the area so that no change occurs to the ecological or geological features characteristic of this natural region. The area proposed as a landmark is within the proposed wilderness area, except for the immediate vicinity around Boar's Tusk. The Crookston Ranch site (40 acres) is



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potentially eligible for the National Register of Historic Places as a representative example of vernacular architecture within the Wyoming Basin homesteading era. The Crookston Ranch is also a prime candidate for designation as a National Rural Historic Landscape because of the association between natural landforms and human modifications within a documented historical context.

The Buffalo Hump and Sands Dunes Wilderness Study Areas are located within the western part of the Greater Sands Dunes ACEC (Map 37). Parts of both the Buffalo Hump and the Sand Dunes WSAs (collectively approximately 60 percent of the ACEC) were recommended as suitable for preservation as wilderness.

The eastern part of the ACEC lies outside and east of Buffalo Hump and Sand Dunes WSAs. Existing uses include oil and gas operations, livestock grazing, and a diversity of recreation activities.

Nonmotorized activities occur in the area. There are an estimated 550 to 650 visitor-days spent annually on recreational activities such as hiking and photography. Nonmotorized hunting in the area attracts an estimated 80 to 100 hunter-days annually. This use is expected to increase to approximately 120 hunter-days annually by the year 2040.

There is the opportunity to provide for a variety of public recreation experiences within this area through visitor awareness, information, and interpretation. Sweetwater County and the City of Rock Springs are actively pursuing these kinds of opportunities to enhance the interest and attractiveness of Sweetwater County and to bolster area economy.

### Mammals

Valuable habitat for big game is found throughout the Greater Sand Dunes ACEC. One of the unique features of the area is that the dunes help to support the only herd of elk known to occupy desert habitat. Large numbers of elk occupy the area during the spring, summer, and fall, using the ponds found throughout the dunes as their source of water and the broken topography and relative inaccessibility for escape. But during the winter, they generally migrate east. During the summer, mule deer can also be found in the area and may even stay throughout the winter. Antelope occupy the flatter, southern portions of the ACEC year-long. Other mammals common to the area include badgers, weasels, jack rabbits, cottontail rabbits, and several species of

rodents. The ACEC also contains whitetail prairie dog colonies; however, no colonies occur in the vicinity of existing wells.

### Avifauna

Excellent waterfowl habitat is provided by the many fresh water ponds found through the ACEC. Waterfowl species use these ponds for nesting in the spring, raising young in the summer, and staging in the fall. Also, a variety of song birds use the ponds during spring and fall migration.

Raptor habitat in the ACEC is limited, due to a general lack of suitable nesting sites. No raptor inventories have been conducted in the ACEC due to its low raptor potential.

### Amphibians

Amphibians, such as the tiger salamander, can be found in the many ponds that occur in the ACEC.

## Monument Valley Area

The Monument Valley area is located in the southeastern portion of Sweetwater County. The northern boundary incorporates the Horseshoe Haystacks, and the western edges of the Washakie Basin make up the western boundary. The district boundary serves as the eastern boundary, and the northern part of the Adobe Town WSA is included in the southern portion of the area. Sandstone, mudstone, and clay formations provide the erosional characteristics of cliffs, arroyos, rock pinnacles, canyons, and wide ravines. The main physical features of the area include geological formations caused by highly erosive soils, extensive paleontological, and important cultural resources. Other features include wildlife (including wild horses), watershed/vegetation, recreation including off-road vehicle use, livestock grazing, and mineral resources.

Approximately 44,920 acres of the Adobe Town WSA are included in the area and is currently administered in accordance with "Interim Management for Lands Under Wilderness Review" guidance. Of that acreage, some 4,480 acres have been recommended for wilderness designation.

There are 3 pipeline and 3 road rights-of-way within the proposed boundary. Wildfire is not a major concern due to low vegetative productivity and lack of structures.



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### Cultural Features

A limited number of cultural resource inventories have occurred in the area primarily due to linear rights-of-way. This information in addition to reports from avocational archaeologists indicate that the area has a high density of historic properties. Cultural sites are primarily either PaleoIndian localities in excess of 6,000 years or late Prehistoric site dating to 1,500 years ago. The Haystack and Basin areas likely contain the oldest retrievable cultural evidence in the planning area. More recent cultural groups also inhabited the region. The unique sequence of prehistoric occupation and the vast quantity of information yet to be retrieved make this an area of particular significance. Additional archeological investigations are needed to develop specific management guidance for protection of these important resources.

### Geological Features

Formations within the Monument Valley area were deposited during the Eocene Era and are largely composed of clay, shale, mudstone, and sandstone. During this era, the area was a wet, well vegetated lowland, rich in tropical and semitropical flora and fauna common to the time. Active volcanos to the north and west deposited large amounts of ash which account for the common occurrence of bentonite and zeolite today. Millions of years of erosion have removed the overburden exposing sand and mudstone outcrops, escarpments, rock pinnacles, and other geologic configurations.

### Livestock Grazing

The area is included in the Rock Springs Allotment. Forage production is low and water is poorly distributed. The area is identified for year-round use but is primarily used in the winter months by sheep and cattle.

### Mineral Resources

The general area has been determined to have a moderate to high potential for hydrocarbon deposits. Three natural gas wells are producers, and a fourth well produces both natural gas and oil. Six wells were drilled and abandoned. That area of the proposed area within the Adobe Town WSA is presently closed to oil and gas leasing. The rest of the proposed area is open to leasing and is presently leased.

An oil shale withdrawal affects the area; however, it is presently under recommendation for revocation. Little potential exists for salable minerals such as topsoil,

gravel, or flagstone. Neither coal nor sodium exist in commercially minable quantities.

### Paleontological Features

Probably the single most important feature in the area is the wide variety of scientifically significant fossils. The Washakie Basin contains one of the best exposures of Middle and Late Eocene rocks and fossil information in Wyoming. Fossil collections have taken place since the 1860s. Many of these collections are now displayed at major universities and museums. Work continues to discover unknown species.

### Recreation/ORV Use

The area provides for primitive recreational opportunities including camping, hunting, sight-seeing, photography, both legal and illegal artifact collecting. This is limited ORV use on designated, existing roads.

### Watershed/Vegetation

The entire area is considered a high desert environment with an annual rainfall of 7 to 9 inches. Precipitation can be characterized as high magnitude, low frequency runoff events. The area is highly susceptible to wind and water erosion. There are 4 natural playa lakes and several artificial reservoirs. Sand Creek is the only stream and is classified as intermittent with possible torrential runoff during spring snowmelt and summer storms. Five springs and seeps provide minimal riparian habitat but are not considered dependable water sources.

Vegetation is typical of high desert environment with alkaline soils, consisting of saltbush and low density sagebrush communities. High density sagebrush and related grasses and forbs may be found in isolated areas. Greasewood communities can also be found. Areas essentially devoid of vegetation include rock outcrops, badlands, and steep slopes. Due to climatic and soil conditions, any surface disturbance is difficult to reclaim.

### Wildlife/Wild Horses

Wildlife is representative of faunal forms adapted to a high desert environment. Mule deer, mountain lion, and ferruginous hawks are found along the Horseshoe Haystacks. Eagles, prairie falcons, hawks, and owls are found on clay buttes and rock monuments. A diversity of small mammals provide food for predators including raptors, coyotes, badgers, and bobcats among others. Antelope are the primary browsing species.

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The Adobe Town Wild Horse Management Area plan provides guidance within the proposed area. Present population objectives in this portion of the management area are 165 to 235 horses. The 1990-91 inventory indicated populations at approximately 500.

### Natural Corrals ACEC

The Natural Corrals ACEC is managed primarily for cultural, historical, geologic, and recreational values. The lands covered by this ACEC are on the eastern flank of the Rock Springs Uplift (and within a large intermontane basin bounded by the Wind River Mountains to the north), the Uinta Mountains on the south, the Overthrust Belt on the west, and the Sierra Madre and Granite Mountains toward the east. The Natural Corrals ACEC was designated in April 1982 and published in the *Federal Register* on June 30, 1982.

The Natural Corrals is a picturesque area of sharp ridges and small, narrow draws lined by sharp massive boulders of volcanic rocks. These boulders range in size up to that of small houses. The crevices between many of these boulders are large enough for a human to enter, and some deep enough that ice forms in the winter and may be preserved until mid-summer. These areas are known as ice caves. Water is trapped in fissures occurring in the volcanic rock and among the boulders, providing the source for the springs found at the Natural Corrals. The term "Natural Corrals" is apparently derived from a narrow draw in the area occupied by a spring and a small, wet meadow.

The area consists of 1,276 acres, of which 160 acres are patent and not subject to Federal management. A 20-year withdrawal of 357.34 acres in T. 21 N., R. 101 W., Section 18 does not allow settlement, sale, location, or entry under general public land laws including the mining laws (subject to valid existing rights). The purpose of the withdrawal is to protect archeological values and geologic values from adverse impacts associated with construction projects, mineral production, and unregulated recreation activities.

Recreation opportunities exist for camping, picnicking, winter sports, and a variety of outdoor activities.

This ACEC lies within the Divide Basin Wild Horse Management Area. Use by wild horses in the Natural Corrals ACEC is minimal.

### Oregon Buttes ACEC

The Oregon Oregon Buttes ACEC was designated in the April 1982 and published in the *Federal Register* on

June 30, 1982 to protect the scenic integrity as a historic landmark. The Oregon Buttes ACEC lies on a structural platform which joins the Rock Springs Uplift to the Wind River Mountain Range (Zeller and Stephens 1969). At Oregon Buttes, the Continental Divide splits into east and west rims, which rejoin at Bridger's Pass, south of Rawlins, and encloses an area known as the Great Divide Basin.

Because the Buttes are a dominating landform, it was faithfully noted by emigrants using the Oregon Trail. To them, it marked the halfway point in their journey from Independence, Missouri, to the Pacific Ocean. The Buttes also denoted the Continental Divide and the point where they crossed into the Pacific watershed.

Oregon Buttes provides excellent wildlife habitat. The area is used heavily by big game species, and the Buttes themselves are occupied by many raptors.

Bird watching, wildlife photography, rock climbing, backpacking, hunting, horseback riding, and sightseeing are uses which now exist in the area. These uses are compatible with the goals for the ACEC.

### Pine Springs ACEC

The Pine Springs ACEC was officially designated an ACEC in the Salt Wells MFP (April 16, 1982) and published in the *Federal Register* on June 30, 1982, to protect the cultural resource values. This site is one of the most significant prehistoric campsites in southwest Wyoming. The site was continuously occupied from about 8000 B.C. to 1200 A.D. This value is potentially threatened by vandals and cattle and sheep trampling in the area. One of the greatest dangers to cultural resources may result from intentional vandalism and illegal collecting.

The Pine Springs site is one of several prehistoric archeological sites in the lower Bridger Basin that are situated around mountainside springs formed as the result of geological processes. Glacial erosion surface remnants (the Gilbert Surface) capped by glacial outwash from the Uinta Mountains (the Bishop Conglomerate) now stand as buttes with surface sloping gently toward the center of the Basin. Later erosion surfaces are represented by lower buttes and long-sloping benches which flank the higher Bishop Conglomerate-capped buttes (Sarrock 1966).

Pine Springs supports a community of aspen, chokecherry, and cottonwood, which rarely grows at elevations exceeding 7,000 feet. This stand of broadleaf trees displays brilliant and autumnal coloration, while

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Engelmann spruce, subalpine fir, and junipers are a striking contrast amid the high desert (Salt Wells URA).

The area is considered low potential for fluid mineral development and some potential for sodium mineral development.

### Pine Springs Expansion Area

The Pine Springs Expansion Area includes several historic properties including clusters of stone circles (tipi rings), prehistoric campsites, lithic material procurement quarries, as well as the Pine Springs stratified prehistoric campsite. Stone circle sites are rare in the Green River basin but relatively common elsewhere in Wyoming. They may be indicative of an interface between cultures from the Great Basin and Great Plains areas. This complex of cultural features represents thousands of years of human occupation in southwestern Wyoming. Stone circle sites and stratified archaeological sites are important resources for addressing a number of research questions. These sites are especially sensitive to surface disturbing activities.

Most soils in the area are derived from shales, sandstones, or alluvium. Generally, soils have formed in residual material weathered from bedrock, colluvium, alluvium, basin deposits, and outwash. Permeability is moderate and in much of the area, soils are less than 40 inches deep over bedrock (Sharrock 1966).

Vegetation is clustered around the main spring outlet and along the watercourse between the parallel ridges. It includes various grasses, sage, chokecherry, currant, serviceberry, quaking aspen, Rocky Mountain and Utah juniper, and englemann spruce. The spring is locally known as Pine Springs because these spruces, standing as high as 100 feet, are mistakenly thought to be pines (Sharrock 1966).

The band of streamside vegetation extends down the mountainside approximately 300 yards from the spring outlet and shows an interesting gradation from serviceberry to aspen to englemann spruce to aspen to narrowleaf cottonwood, in a downstream direction, respectively (Sharrock 1966).

Vegetation in the Pine Springs expansion area away from the spring itself primarily consists of low density sagebrush (less than 35 percent canopy cover) LANDSAT classifications although saltbush, high density sagebrush (greater than 35 percent canopy cover), greasewood, and barren LANDSAT classifications are present in small amounts.

### Red Desert Watershed Area

The Red Desert Watershed Area (RDWA) encompasses 645,570 acres of which 481,930 are public lands (federal surface/federal minerals, federal surface/private minerals, or private surface/federal minerals) administered by BLM. The Rock Springs District boundary provides the east boundary of the watershed area while the western rim of the Continental Divide constitutes the southern and western boundaries. The northern rim of the Continental Divide provides the northern boundary. The RDWA incorporates the western portion of the Great Divide Basin, one of a few closed basins found in the United States.

Six Wilderness Study Areas (Alkali Draw, South Pinacles, Alkali Basin-East Sand Dunes, Red Lake, Honeycomb Buttes, and Oregon Buttes WSAs) are located within the watershed area. Of the six WSAs, Honeycomb Buttes and Oregon Buttes have been recommended for wilderness designation for a total of 40,900 acres within the watershed boundary. Approximately 10 to 20 acres of the northeast corner of the Cedar Canyon ACEC and approximately two-thirds of the Oregon Buttes ACEC are also included in the area.

### Cultural Resources

There has been less formal inventory for cultural resources in the Red Desert area than anywhere else in the planning area. The limited inventory that has been done indicates that there is likely the same density and diversity of sites in the Red Desert area as elsewhere in the planning area.

There is a known stratified prehistoric site that may date to PaleoIndian times (ca. 10,000 years before present). There is a potential for several other PaleoIndian sites to be found. An Archaic housepit site was excavated on the Frontier Pipeline in the Buffalo Hump area. Several stone circle sites are known below Steamboat Mountain. A very old rock art site is known west of Black Rock.

Historic resources known in the area include the Point of Rocks to South Pass freight road and stations at Freighters Gap and Rador Springs. This historic linear corridor is probably significant on a regional level as a result of its importance to the expansion era of Wyoming history after the completion of the Union Pacific Railroad in 1868. The Rador Springs station is eligible for the National Register of Historic Places. It has been the subject of study by Western Wyoming College historical archaeologists. The exact location of the Freight Gap station is not known.

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There are some sites related to early ranching in the Red Desert area, but most of these are on private land. A historical context for the area has not been written and the significance of particular sites should not be evaluated without some kind of areal context.

The Eden-Farson Site and Finley Site are not included within the boundary of the Red Desert area as herein defined. The important rock art sites in Cedar Canyon, Pine Canyon, and White Mountain are likewise outside the area.

The Red Desert area does not seem to have any particular unifying settlement pattern reflected in the prehistoric or historic record. However, there is a very limited data base to analyze. There may be some important sites in the sand dunes within the area (as there are elsewhere in the Killpecker Dune Field) and there may be PaleoIndian sites associated with the Chain-of-Lakes area since these depression lakes are thought to derive from meltdown of Pleistocene glaciers

about 10,000 years ago. Otherwise, the Red Desert area probably does not differ remarkably from the remainder of the planning area.

Although native people have inhabited southwestern Wyoming including the Red Desert sporadically the last 10,000 years, two areas may be of significant concern to Native Americans within the watershed. Both North and South Table Mountains contain several archeological sites. A significant portion of the Point of Rocks-South Pass Historic Trail meanders through the watershed area.

### Livestock Grazing

The entire watershed area is open to grazing. Six grazing allotments encompass 645,570 watershed acres (additional allotment acreage outside the watershed boundary is not considered here, see grazing section of the RMP for specific information about grazing allotments). Grazing on public lands within the watershed is shown in Table 3-29.

TABLE 3-29  
GRAZING ON PUBLIC LANDS WITHIN THE RDWA

Allotment Name	Federal Acres	Mgmt. Cat.	Kind of Livestock	Season of Use
Bush Rim	51,690	M	Cattle	Sp,S,F,W
Continental Peak	34,250	M	Cattle/Sheep	Sp,S,F,W
4th of July	9,160	I	Cattle	Sp,S,F,W
Red Desert	245,390	M	Cattle/Sheep	Sp,S,F,W
Rock Springs Grazing	133,000	M	Cattle/Sheep/ Horses	Yearlong
Steamboat Mountain	11,640	I	Cattle	Sp,S,F,W
<b>Total Federal Acres</b>	<b>485,130</b>			

There are 21.37 miles of allotment fence (primarily along the district boundary) and 1.9 miles of drift fence. Thirteen reservoirs, 1 spring, 1 pit, and 5 water wells found on public lands provide some of the water necessary for livestock and wildlife.

### Minerals

#### Oil and Gas

Table 3-30 represents potential for development of oil and gas in this area.

Two concentrated drilling areas occur in the area. The Greater Nitchie Gulch field currently affects 4,415 acres in the westernmost portion while the Wamsutter Arch field affects over 36,840 acres in southeastern portion of the study area. The entire watershed area is open to leasing except those areas with post-FLPMA leases currently managed under the Interim Wilderness Management Policy and Guidelines for Lands under Wilderness Review. Once final wilderness determinations are made, those areas not selected will revert to leasing although some areas may require special stipulations to protect unique resources.



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TABLE 3-30

## POTENTIAL FOR DEVELOPMENT OF OIL AND GAS (acres)

	Fed. Surface/ Fed. Minerals	Fed. Surface/ State Minerals	State Surface/ Fed. Minerals	Private Surface/ Federal Minerals
High	382,946	17,564	764	1,540
Low	79,706	1,677	639	64

Currently, approximately 93,000 acres are closed to leasing, no surface occupancy restrictions affect 2,540 acres, and seasonal restrictions for protection of big game crucial winter range and calving/fawning areas affect 72,750 (federal surface only) acres. Seasonal restrictions for protection of raptors could affect up to a maximum of 960 acres per active nest depending upon the topography.

### Coal

Although most of the watershed area is underlain with deep deposits of coal, the potential for occurrence at a reasonable depth affects approximately 48,940 acres of which 46,740 acres could be developed. No coal mining activities are occurring in the watershed area at this time although there is a proposal to expand mining operations northwest of the Jim Bridger Power Plant.

### Coalbed Methane

Coal gas is present wherever coal is found; thus, the potential exists for extensive development in the southern half of the watershed area. Limited exploration and no development for coalbed methane has occurred.

### Mineral Materials

Potential exists for development of mineral materials (sand, gravel, and volcanic rock) on 11,980 acres including 50 acres of federal surface/state subsurface.

### Locatable Minerals

A number of current mining claims affect the northeastern portion of the planning area, specifically areas north of the Honeycomb Buttes and Oregon Buttes and in the vicinity of John Hay Reservoir. No Notices or Plans have been received for any of these claims.

### Seismic Activities

Other than wilderness study areas (although seismic activity can occur within WSAs depending upon the method used), the entire watershed area is open to seismic activity.

### Geology and Geologic Hazards

The RDWA lies within the western portion of the Great Divide Basin. The Great Divide basin covers approximately 3,500 square miles and constitutes an internally drained (or closed) basin. The most evident feature of the basin is the dry-lake flats. These shallow depressions are the remnants of Pleistocene era lakes.

Other geologic features found in the area include badlands, flat-topped mesas, isolated buttes, and active sand dunes. Over 6 miles of faults in the northeastern sector of the area affect the watershed area of which 5.98 miles are located on public lands. Landslides can occur around areas of steep terrain and affect approximately 415 acres. Windblown sand is a common occurrence, affecting up to 44,380 acres in the watershed. Vertebrate fossils of scientific significance have been found in other parts of the planning area in formations like those in the RDWA.

### Off-Road Vehicles

Off-road vehicles include a diverse mode of transportation including 4-wheel-drives (the most common), dirt bikes, and dune buggies. The Greater Sand Dunes ORV play area, lying to the west of the watershed area, is currently the only open play area in the planning area.

All WSAs are presently closed to ORV use off boundary roads unless there is an emergency or for administrative purposes. In the remainder of the watershed

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area, ORV use has been limited to existing roads or trails. There are no open play areas within the watershed area.

### Recreation

The watershed area provides many recreational opportunities. Sight-seeing and hunting are two of the most popular forms of recreation while rock hunters can find a variety of interesting rocks including petrified wood and agates around the Oregon Buttes area. Outstanding opportunities exist for solitude although several types of tours are available to individuals or groups including wagon train, horse, and mountain bike tours. It is estimated that the RDWA receives approximately 20,000 user days per year.

The management objectives are to develop, maintain, preserve, or enhance the various recreational activities such as camping, picnicking, winter sports, and collecting that occur in the RDWA, provide for an optimum and satisfying visitor experience, and enhance hunting and fishing opportunities to maximize the visitors recreation experience. Camping restrictions limit camping to 14 days.

### Rights-of-Way/Withdrawals

Two major pipelines are now located in an east-west route about 33 miles long. A 3.5-mile window from north of I-80 at the border of the Great Divide Resource Area ties into the east-west route.

There is a 129-mile county road network within the Great Divide Basin in addition to 66 miles of private and BLM roads.

The Great Divide Basin is encumbered by the coal withdrawal which precludes disposal of the coal resource. In addition, a stock driveway withdrawal is located along the eastern border of the basin.

### Soils

The RDWA is dominated by well to excessively drained soils overlying bedrock between 10 to 40 inches. The dominate soil types have a sandy loam, fine sandy loam, or loam surface and substratum. These soils formed on upland plains dissected by rocky ravines, short escarpments, and draws. Slopes range from 5 to 30 percent.

Scattered throughout the basin are very deep, moderately well drained soils dominated by silty clays. These soils formed in level basins and on fans derived from alkaline and saline lacustrine deposits. Included are

areas of playa lakes which seasonally retain water. Slopes range from 0 to 3 percent.

The Killpecker Dune field, composed of active and dormant sand dunes, traverses the area. Slopes range from 5 to 30 percent.

### Vegetation

Vegetation in the RDWA primarily consists of big and low sagebrush communities found under the low density sagebrush classification (less than 35 percent ground cover). The big sagebrush community generally occupies areas where precipitation averages 7-9 inches per year and soils are sandy or loamy, well drained, and non-alkaline. The major shrub component affiliated with the big sagebrush community is Wyoming Big Sagebrush; other species commonly found in this ecosystem are: rabbitbrush, winterfat, sandberg bluegrass, wheatgrasses, ricegrass, sandwort, and buckwheat.

Vegetation associated with the low sagebrush community can be found on windswept ridges or in areas where shallow soil exists. Alkali sagebrush or black sagebrush dominate this community depending upon soil conditions and precipitation amounts. Alkali sagebrush and associated vegetation (e.g., shadscale, wheatgrasses, sandberg bluegrass, and milkvetch) is common in highly alkali soils while black sagebrush is found in areas where precipitation averages 10-14 inches per year and shallow calcareous soils exist. Phlox, bitterbrush, mountain mahogany, sandwort, sandberg bluegrass, and violets are commonly found in association with black sagebrush.

Big sagebrush communities under the high density sagebrush classification (ground or canopy cover in excess of 35 percent) are found in areas where elevation exceeds 7,000 feet and precipitation averages above 9 inches a year. High density Wyoming sagebrush community is found in areas with deep loamy or sandy soils. Common species associated with high density Wyoming sagebrush are: douglas rabbitbrush, phlox, thickspike and bluebunch wheatgrass, needlegrass, and great basin wildrye.

Significant pockets of saltbrush (Gardner saltbrush, winterfat, Indian ricegrass) and greasewood communities (saltbush, meadow barley, sandberg bluegrass) exist throughout the watershed. Saltbrush communities are found in clay soils associated with badland topography, colluvial deposits, and alluvial outwashes. Topsoil usually has a high salt content and vegetation is generally sparse. With the exception of stabilized sand dunes, greasewood communities inhabit flat, alluvial fans, flood-



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plains adjacent to intermittent streams, and stabilized sand dunes. Soils are fairly deep, poorly drained, and at least, moderately alkaline.

Intermittent streams, springs, and seeps provide the needed water for vegetation affiliated with riparian zones. Meadows may ensue anywhere a spring or seep occurs. Vegetation is mainly comprised of grasses and forbs including Nebraska sedge, bluegrasses, pusseytoes, milkweed, and iris while on the outer edges mesic grasses such as bluegrass or basin wildrye along with silver sagebrush may be found. Isolated cottonwood communities exist in the Chicken Springs area.

*Lesquerella macrocarpa* is a candidate under review for listing as sensitive under the Federal Endangered Species Act and can be found on Bush Rim, Oregon Buttes, and Continental Peak. *Lesquerella macrocarpa* is a large-fruited bladderpod occurring on sparsely-vegetated clay flats, benches, slopes, and hills. It is found in association with Gardner's Saltbrush.

### Visual Resources Management

The RDWA lies in the physiographic province called the Wyoming Basin Province. The public lands will be managed in accordance with visual resource management standards to protect, maintain, and enhance the visual resource values.

The major portion of the watershed area has been identified as Class IV incorporating over 525,000 acres. Class IV classification allows for modification to the landscape character; however, any change should reflect the character of the overall landscape.

The westernmost portion of the study area has been identified as Class III, encompassing over 28,000 acres, although isolated flat-topped mesas and buttes are qualified as Class II. Deviation may occur but must remain subordinate to the existing landscape.

East Sand Dunes, Oregon Buttes, and Honeycomb Buttes have been identified as Class II which affects over 40,000 acres. Class II designation mandates that any changes must not be evident to the extent it attracts attention away from the original character of the existing landscape. Should Oregon Buttes and Honeycomb Buttes be designated as wilderness, classification would be upgraded to Class I, thereby allowing very limited management activity and only to the extent that it does not attract attention.

### Watershed

The Red Desert Watershed Area falls within the Great Divide Basin, hydrologically a closed basin. Most streams are intermittent and flow toward the center of the basin into playa lakes where they either recharge the aquifers or, more likely, evaporate.

Artesian groundwater as well as unconfined groundwater are found throughout the watershed area. Generally, sedimentary rocks associated with the flanks of the surrounding uplifts create favorable conditions for extensive artesian groundwater systems. Although unconfined groundwater is found, water movement is generally toward the central part of the Great Divide Basin. Few studies on groundwater occurrence within the Red Desert have been conducted to date. Five formations known to contain groundwater within the watershed area include the Bridger, Laney Shale, Wilkins Peak, Tipton Shale, and Wasatch formations. Water quality ranges from poor to good depending on the formation. Generally, the quality of groundwater decreases with depth. Most wells range from 500 to 1,200 feet.

The Almond Formation, a good potential source of domestic drinking water, is found in the western rim of the area.

### Wild Horses

The RDWA contains 612,370 acres of the Great Divide Basin Wild Horse Management Area. The wild horse area is managed by objectives outlined in the Divide Basin Wild Horse Herd Management Plan implemented in 1982. This plan provides for the protection and management of 415 to 600 wild horses. Management objectives of diverse age, color, sex, and general good health has been achieved and are presently being maintained.

### Wildlife Habitat

The Great Divide Basin is a cold, high elevation, desert environment. Low precipitation, short growing season, and cool average ambient temperature result in limited plant growth and forage production. Saline soils also play an important part in forage production and species occurrence of both plants and animals. Along Bush Rim, Freight Gap, and other rims surrounding the basin, vegetation is highly variable providing the most cover and forage. Small pockets of aspen, willow,

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and serviceberry are found where snow accumulates. Unique plant species occur on clay outcrops of the Honeycombs, Continental Peak, and along Joe Hay Rim. A detailed plant inventory has not been conducted in the Hatcher Mesa-Emmons Cone area. Wildlife using the rim habitats include elk, deer, porcupine, beaver, golden eagles, red-tailed hawks, ferruginous hawks, prairie falcons, bobcat, sage grouse, and a variety of songbirds.

Aspen provides cover within which deer fawn and find escape from predators and people. The aspen also affords nesting strata for hawks and songbirds. Beaver periodically venture into the basin where they cut aspen to catch snowmelt. The beaver ponds have not been checked since 1987, which was the beginning of extended drought in southwest Wyoming. Limber pine occur on the southeast slope of Steamboat Mountain and Oregon Buttes where flickers, porcupine, Clark's nutcracker, and Wortman's golden-mantled squirrel are found. South-facing slopes containing serviceberry, mountain mahogany, and Ribes (spp.) are favored as deer and elk winter range. Deer, elk, and antelope winter in various parts of the basin, although only about 99,540 acres are classed as crucial.

Clay, siltstone, and sandstone outcrops across the basin are used by nesting raptors. Golden eagle, great-horned owl, and prairie falcon prefer the side slopes and cavities, while ferruginous and red-tailed hawks will nest atop pinnacles and rocks.

Below the talus slopes, vegetation is predominately sagebrush, greasewood, saltbush, or forb community.

These habitats are favored by antelope, prairie dog, jackrabbit, swift fox, badger, and short-horned lizard. Snowy plover, northern shrike, horned lark, and burrowing owl are common residents. An estimated 9,200 acres of occupied white-tailed prairie dog habitat exists here. Two reports of black-footed ferret sightings have been recorded, one near Brannan Reservoir and the other near Buffalo Hump. No other threatened or endangered wildlife species is known to occur in the area. A variety of game and non-game species inhabit the watershed area. Big game species such as elk, mule deer, and antelope can be found.

Generally speaking, crucial winter range affects the southern and western perimeters.

Seasonal restrictions apply to crucial winter range or calving areas during the period of November 15 through April 30.

Nine known sage grouse leks occur with 8 leks affecting federal lands within the watershed area. Seasonal restrictions within a 2-mile radius around the strutting ground and nesting area are between March 15 and July 31.

Raptors can be found throughout the watershed area although most are concentrated in the Oregon Buttes ACEC and the Honeycomb Buttes WSA. Seasonal restrictions apply to any construction activity during the period from February 1 through July 31 within a ½ mile (or line of sight depending upon the topography) of an active nest. Table 3-31 shows the presence of the different species of raptors within the watershed area and the occurrence on public lands.

**TABLE 3-31**  
**RAPTORS WITHIN THE RDWA**

Species	Total Number	Number on Public Lands
Golden Eagle	14	12
Kestrel Falcon	3	1
Prairie Falcon	31	22
Ferruginous Hawk	44	28
Red Tail Hawk	3	2
Burrowing Owl	7	4
Great Horned Owl	3	3
<b>Total</b>	<b>105</b>	<b>72</b>

## South Pass

The scenic vista of South Pass is among the most important historic landscapes along the Oregon and Mormon Pioneer National Historic Trails. The area is well recorded in journals by pioneers ranging from the 1813-14 Astorian Party to the emigrants to Oregon beginning in 1843, Utah beginning in 1846, and California beginning in 1849 until the Transcontinental Railroad was finished in 1869. Currently, the Pony Express and California Trails which used the same general corridor, are proposed for National Historic Trail status. This remarkable location was the first point where emigrants observed a stream (Pacific Creek) draining to the Pacific Ocean and thus marks roughly the halfway point in the epic westward journey. Journal accounts also document scores of pioneer graves in the area; only a few have been found.

South Pass served as the primary mountain gateway to the West for emigrants traveling the Oregon Trail during the great westward migration of the mid-19th century. The pass was the site where emigrant travelers traversed the Continental Divide and entered what was then called the "Oregon Country." South Pass is located on the northwest edge of the Wyoming Basin — a desert-like geographical feature which extends south for 150 miles and forms a complete break in the Rocky Mountain chain.

The site on the pass where several commemorative markers have been placed is already listed on the National Register of Historic Places. In 1959, the National Park Service designated South Pass a National Historic Landmark (NHL). The National Park Service proposed a boundary for the NHL in 1984. The boundary was never finalized by National Park Service or BLM and no management prescriptions have been determined. The nomination included 5,760 acres of both BLM-administered and private lands in T. 27 N., Rs. 101-102 W.

The area that seems to have the most historic value is the viewscape created by the Continental Divide, including the top rim of Pacific Butte on the south and the divide between waters flowing to Pacific Creek and the Sweetwater River on the north and east. The west boundary would include the headwaters of Pacific Creek and extends westerly.

## Steamboat Mountain Area

The area contains approximately 43,010 federal acres of a total 48,060 acres within the described geographic

boundaries see Table 3-27. Forming the south boundary is the talus slopes off the base of Steamboat Rim and Steamboat Mountain. Easterly, the boundary follows the road at the head of Split Rock Canyon northerly along the Continental Divide to the top of the dugway on Bush Rim. Here it follows a two-track trail northwesterly and north to Parnell Creek. The north boundary follows Parnell Creek downstream to Jack Morrow Creek where the boundary follows the road all the way to Indian Gap. From here it follows an old two-track down along the base of Steamboat Rim.

The area has highly varied topographic features, providing big game with escape cover, space, and foraging habitat. Elevation ranges from 7,063 to 8,683 feet mean sea level. Tall sagebrush provides escape cover, shelter, and winter feed. Bitterbrush, serviceberry, mountain mahogany, chokecherry, and a variety of other shrubs also provide available browse in deep snow. Grass-covered ridgetops offer additional forage for elk, especially during crucial winter periods.

Because of the terrain (steep slopes with dense sagebrush used for elk calving and high ridge tops utilized during the winter), elk use the area year round. Activities in the area tend to displace the elk great distances (upwards of 3 miles) due to the extended sight distances of the desert-type terrain. Elk tend to abandon the Steamboat area rather than seek shelter in adjacent canyons because of the narrowness of benches and canyons and lack of hiding cover.

Water is abundant and found in good distribution through springs, ephemeral and perennial streams, seeps, and reservoirs. Snowpack commonly lies along steep slopes in lee areas late into spring. One supplemental wildlife water (guzzler) is found in the area.

The Sands-Steamboat elk herd has fluctuated widely from a high population of about 1,100 in the late 1970s to about 245 in 1979-1980. The Steamboat Herd Unit objective is 500. This herd ranges from just north of Green River to Red Hill (east of Point-of-Rocks) and north to Highway 28 and the Sweetwater River. Roughly one-third of the elk are found in the special management area yearlong.

The Sands-Steamboat elk herd is very important to local Wyoming residents, and is one of the only true desert elk herds in Wyoming. These elk are highly visible and are seen frequently by people driving through the sand dunes, Steamboat Mountain, and the Red Desert areas. Elk are the least tolerant to human disturbance of any of the big game species in the planning area and have been known to be disturbed

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upwards of 3 miles from activity in a desert environment. Past public meetings held for coalbed methane development in the Steamboat Mountain area has brought up concern over this elk herd being displaced from the region.

Historically, from 400 to 700 deer from the Wind River Mountains wintered here. Construction of the Highway 28 fence in about 1979, apparently interrupted winter migration. Less than 250 deer presently winter in this area, although it serves as excellent spring-summer-fall deer range. Most suitable habitats are occupied by deer during these seasons.

### Cultural Resource Concerns

Steamboat Mountain is an area in which there are a number of ecotones within a relatively small geographic region. This phenomenon results in a diversity of resources needed by prehistoric peoples within close proximity of each other. People tended to situate long-term campsites, especially wintering camps, in the Steamboat Mountain area to take advantage of this ecological diversity.

The result of this behavior is a high density of prehistoric sites. Furthermore, the depositional environment in the area, i.e., stable sand sheets and areas of soil formation associated with springs, tend to preserve archeological materials in good stratigraphic context. The area not only has roughly double the average number of sites per section (e.g., 6.5 sites/section), but also the sites tend to be much more significant because they contain strata of occupation covering thousands of years. This situation is particularly evident around Iron Spring (on private land) and Pine Springs. Although the entire region has not been studied, it is probable that this pattern holds true for the mountain proper, the stable sand sheet area to the west and south, and the Jack Morrow Hills area to the northeast.

### Livestock

The area has portions of five different allotments (Sands, Fourth of July, Steamboat Mountain, Pacific Creek, and Bush Rim) within its boundaries with the majority occurring within Pacific Creek and Steamboat Mountain Allotments. The class of livestock is generally cattle although the Sands allotment has minor sheep use. Season of use ranges from spring until fall.

### Minerals

The Steamboat Mountain area is considered high potential for oil and gas development although under

reasonable foreseeable development only 9 wells are likely to occur within the area during the life of this plan. Approximately 11,200 acres of the Steamboat area occur within the coal potential area. Of this total, approximately 9,500 acres are federally owned. Previous coal planning actions were not completed for the area because there was no interest from industry when the original coal screening process was completed in 1981. Current interest and potential for coal development is still low.

### Native American Concerns

During hearings for the Triton Coalbed Methane Project, spiritual leaders of the Eastern Shoshone tribe reported several specific features in the Steamboat Mountain region that are of concern to them. The general area contains at least six rock art sites dating from historic times to perhaps 2,000 years ago. Furthermore, artifacts from several archeological sites tested in the region as well as historical research indicate that the area likely served as a prehistoric trade center thus bringing together several cultural groups. This pattern is reflected both in rock art and in fur trade era artifacts discovered in the area.

The area also has a number of flat-topped mesas and the Boar's Tusk volcanic vent formation. At least one of the mesas has several stone circles on it that have been identified as historic vision quest sites. The Shoshone spiritual leaders associate volcanic features like Boar's Tusk and North and South Table Mountains with the origins of the Shoshone people.

The fact that the Eastern Shoshone tribe has identified specific geographic features and archeological sites as of concern to them, together with research supporting time depth to those concerns makes it incumbent on the BLM to take these areas of concern into account both under the National Historic Preservation Act and the American Indian Religious Act.

### Recreation

The Steamboat Mountain area provides high value recreational activities. Included are camping, hiking, wildlife viewing, hunting, and picnicking. A backcountry byway (Tri-Territory loop) has also been proposed for this area.

### Visual

The present VRM class has overlap with the Sand Dunes as Class II and Steamboat as Class III. Rock and cliff formations around Steamboat provide diversity in



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form, structure, texture, and hue. Aspen groves and conifer stands contrast and enhance the visual aspect. Depth is provided by Steamboat Mountain, numerous deep canyons, and the talus slopes of Steamboat Rim. Diversity is provided through a variety of vegetation communities, springs, seeps, meadows, and both intermittent and ephemeral streams.

### Wildlife

The Steamboat Mountain area is of special interest because it provides a favorable environment for the survival of mountain plant species that otherwise would not be found in the semi-arid plains of the surrounding area. It is one of only a few places where elk populations are found away from a high mountain environment. Surrounding this area is a complex winter range and additional parturition areas (30,000 acres). The area also provides habitat for an abundant population of antelope and mule deer. Two unique species of rodents are found within the Steamboat area. The yellow-bellied marmot, and the Wortman's golden-mantled ground squirrel, inhabit the boulder fields in association with limber pine.

In addition to a number of relic plant populations, one candidate plant species, *Lesquerella macrocarpa*, and one state endemic, *Townsendia spathulata*, are found within the Steamboat area. Several springs along the slopes of Steamboat Mountain also provide specialized habitat for a number of additional plant species not normally associated with the semi-arid climate of the Wyoming Basin.

### Tri-State Monument Area

The Tri-State Monument Area is proposed for the protection of watershed values in the Pine and Little Mountain drainage systems. The watershed system relates directly to the amount of sedimentation contributed to the Green River drainage through Red Creek, Currant Creek, Sage Creek, and other associated drainages. Watershed features such as water quality and stability are currently threatening the existence of Colorado River cutthroat trout through habitat deterioration. The area would be comprised of the Red Creek ACEC and the Currant Creek and Sage Creek watersheds.

The formations exposed at the surface in the area were deposited during the early part of the Tertiary age; only a small area along the border of Utah contains any rocks of Cretaceous age. The formations found within the area (from oldest to youngest) are: the Blair, Rock

Springs, Ericson (all Cretaceous in age), Fort Union, Wasatch, Green River, and Bishop Conglomerate.

The proposed area is within an area determined to have high potential for the occurrence of hydrocarbons. The proposed area is within an area determined to have low, moderate, and high potential for development of hydrocarbons. The area has low to moderate potential for the occurrence of coalbed methane. The boundaries identified in the previous coal screening process did not encompass this area.

The area incorporates all or portions of six grazing allotments: Pine Mountain, Red Creek, Salt Wells, Sugarloaf, Spring Creek, and Rock Springs. The area contains a portion of the Salt Wells Creek Wild Horse Management Area (WHMA). The management level is 251 to 365 head. Herd populations have remained at or near objective levels since institution of gathering. Herd objectives of age, color, sex, and general health have been met and maintained.

The area has no developed recreation sites. Recreation activity is dispersed, consisting of hunting, camping, mountain biking, sight seeing, and limited fishing. The area is limited to use of existing roads and tracks for off-road vehicle use. Current recreation use of the area is moderate.

The vegetation composition of the area is not remarkable. However, the presence of several ecological features contributes to the uniqueness of the area. There exists a stand of pinion/juniper trees that are representative of the northernmost presence of this community. Several remnant stands of ponderosa pine, white spruce, and curlleaf mahogany are indicators that suggest the existence of an ecological line between significant communities that is drifting to the south.

Little Mountain and Pine Mountain are aspen/conifer mountain islands rising from sagebrush flats. The Pine Mountain timber compartment contains approximately 2,089 acres of commercial forest lands. The largest concentration of commercial conifer is lodgepole pine. It co-exists with subalpine fir, douglas fir, and aspen. The subalpine fir component is replacing the lodgepole pine. Most of the lodgepole pine sawtimber is overmature (120+ years). Many of the pole stands are quite old, with the small size resulting from stagnation. Aspen is found growing either in pure stands or mixed with one or more of the conifer species.

Pine Mountain and Little Mountain areas receive about 16 inches of precipitation, but the snow fence

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effect of the subalpine fir causes snow to be retained and much more precipitation is accumulated.

Little Mountain is composed of mostly non-commercial woodland types. It contains approximately 1,821 acres of commercial forest lands. Juniper appears in fairly continuous, moderately stocked stands from the 1-80 down through the Firehole Canyon and south toward the Little Mountain area and continues around the west side of the mountain. Small amounts of pinon pine area associated with juniper in the Iron Mountain Wild Horse Basin area, but they are not found anywhere else in the planning area.

Little Mountain has several tree species that are major components in the stands. Aspen has been the primary tree species in the area, but over the last few years subalpine fir has achieved dominance in the stand due to the snow fence effect of the subalpine fir. Subalpine fir requires 18 to 20 inches of precipitation but exists in an area that receives 16 inches.

Much of the timber on both Little and Pine mountains is in a decadent condition with a great deal of bug kill, resulting in a buildup of fuels within the stands. A fire could cause the timber to be lost along with the ability to retain large amounts of snow, resulting in the loss of perennial flows in many of the streams and springs on both mountains.

Most of the natural occurring wetlands south of Rock Springs occurs within this area. Numerous perennial and ephemeral streams originate within the area. Springs, seeps, wetlands, and streams are common and are highly important for wildlife in this area because over 70 percent of the wildlife species are found on only 3 percent of the area. Biodiversity exists on riparian and wetland habitats when these areas are in satisfactory condition.

Small wetlands of one acre or less are created by springs or seeps on Little Mountain and Pine Mountain. Some small wetlands are also located on Richards Mountain and Teepee Mountain, but because of the wind exposure and other factors, these habitats are uncommon. Beaver dam construction at headwaters of streams are the most common natural wetland. Average size of beaver pond wetlands are 0.78 acres. Some artificial wetlands exist in upper Red Creek Basin and in Pine Mountain Allotment; most are the result of stock pond construction. Table 3-32 summarizes standing waters information for the area. All of the larger impoundments like Pine Lake, Pete's Place reservoir, and impoundments off Red Creek, are badly silted and provide marginal habitat for sport fish.

TABLE 3-32

### SUMMARY OF WETLAND AND RIPARIAN HABITAT IN THE TRI-STATE AREA

Class	Number	Acres
Natural Impoundments (includes beaver ponds)	66	52.04
Artificial Impoundments	67	56.77
Beaver Ponds	47	36.96

Streams in the area are characterized by seasonal augmentation by snowmelt and rains. Stability is achieved by armoring with vegetation and providing residual litter. There are 47 miles of intermittent streams and 157 miles of perennial streams (total 204) within the area. Survey work has been conducted on about 73 miles of the perennial stream and about 7 miles of the intermittent streams. This leaves 124 miles with little or no official baseline data. Water quality data exist for many of these streams.

The quality and health of the riparian area vegetation directly relates to the stability of the stream channel, water quality, and fisheries habitat conditions. Currently, the Colorado River cutthroat trout exists in some measure in Currant Creek, Little Red Creek, and Trout Creek (a total length of only about 10 miles). Historically, it would have existed in nearly every perennial stream within the Tri-State Area boundary (including Sage Creek, Red Creek, Vermillion Creek, North Fork Vermillion Creek, Coyote Creek, and Canyon Creek). Many natural ponds, lakes, and springs associated with Little and Pine Mountains are important to wildlife in the area and for base flows of the streams.

The North Fork of Vermillion Creek is a top priority stream for re-introduction of Colorado River cutthroat trout by the Wyoming Game and Fish Department. The quality of the fisheries habitat needs to be improved for re-introductions to take place, and this can only be accomplished by restoring the riparian vegetation communities to an upper seral stage and stabilizing the streambanks.

The Red Creek ACEC was designated to reduce erosion in 1981 and published in the *Federal Register* on June 30, 1982, in an area of naturally high geologic erosion which has been accelerated by activities such as grazing, pipelines, and roads.



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The Red Creek watershed is a basin common to southwest Wyoming and northeastern Utah. The drainage area is approximately 144 square miles of which 35 square miles are in Utah and 109 square miles in Wyoming. The topography is rough and broken, ranging in elevation from 5,500 feet at the confluence of Red Creek and the Green River in Utah to 9,500 feet along the divide near the upper end of the basin in Wyoming.

Red Creek has an extremely high annual sediment yield (84,433 tons/year, average 1972-1976). This high sediment load is a major concern of groups interested in the recreational value of the Green River in Utah below the confluence with Red Creek. Richard Mountain within this area, is an area of red silt rim erosion that contrasts beautifully with the dominant juniper vegetation (Class 2).

Erosion within the Red Creek Watershed is attributed to natural processes (geologic erosion) and accelerated erosion brought about by human activity. Historically, Red Creek has been an area of severe natural erosion resulting from the combination of soft bedrock formations, steep topography, and precipitation rates and patterns. The rainfall is insufficient to produce dense vegetation and the summer storm events occur as cloud bursts that result in high peak flows. Intensive grazing by sheep in the late 1800s and early 1900s, and by cattle later in the 1900s has altered the protective vegetative canopy resulting in increased runoff. When the volume of runoff is increased or is concentrated in natural or artificial channels, its erosive energy is increased. The improvement of county roads within the eastern half of the watershed and the Mountain Fuel road on the west side of the basin have also accelerated erosion. Increased water velocity caused by improper placement and lack of outlet protection for culverts has initiated severe gullying in several tributaries of Red Creek.

The control of geologic erosion, by and large, is often difficult to achieve because the natural conditions that have prevailed over time cannot be changed significantly to effect any great reductions in erosion. The most viable method for sediment reduction is to reduce and control accelerated erosion caused by man's activities. Watershed management plans will focus on opportunities of controlling accelerated erosion.

### Big Game

The broken topography, incised canyons and variety of habitats makes this area among the most attractive and most valuable for the wildlife resource. Crucial big

game winter range for antelope occurs in lower Red Creek, Spring Creek, and along Flaming Gorge. Deer winter along Currant and Sage Creek, habitats south of Titsworth Gap, and in Red Creek Basin. Elk crucial winter range occurs on ridges from Sheep Mountain south to the Utah border and eastward through Pine Mountain and Four-J Basin area see Table 3-33. Potential big horn sheep habitat occurs on Richards Mountain and transplants into Utah will probably lead to their occurrence here in future years. Fair moose habitat exists on several waterways and on Pine, Tepee, and Little Mountains.

TABLE 3-33

### BIG GAME CRUCIAL WINTER RANGE Tri-State ACEC

Species	Total Acres	Percentage of Area
Antelope	74,565	21.0
Deer	211,480	59.6
Elk	101,146	28.5

Although the Wyoming Game and Fish Department has not identified specific calving and fawning habitats, calving and fawning occur in many parts of the area. Specifically, the northwest portion of Pine Mountain, headwater of Red Creek, and top of Little Mountain are suspected elk calving areas. Deer fawn in a wide variety of cover areas including Trout Creek, Dipping Springs Canyon, Upper Red Creek Basin, and June Creek. Any vigorous aspen stand with water and good forage nearby will offer suitable deer fawning habitat.

Although uncommon, mountain lion are found in the Iron Mountain-Little Mountain area down to the Glades. The deep canyons, poor road system, and abundant prey species found here offer good habitat for the big cats. From time to time over the past 20 years, black bear were noted on Tepee and Pine Mountains. Fair to good bear habitat exists in the Tri-State area.

### Raptors

Canyon Creek and side canyons are by far the most important raptor area between Rock Springs and the Yampa River. About 41 of the 91 raptor nests found in the ACEC are found in this area. Rugged steep walled canyons and an abundance of prey favor continued use

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of these habitats. Table 3-34 is a list of raptor species number and proportion found in the area of concern.

**TABLE 3-34**  
**RAPTOR SPECIES NEST COUNT**

Species	No. of Nests	Percent
American Kestrel	1	1.1
Ferruginous Hawk	2	2.2
Golden Eagle	30	33.0
Great-horned Owl	2	2.2
Marsh Hawk	2	2.2
Prairie Falcon	27	29.6
Red-tailed Hawk	26	28.6
Sharp-shinned Hawk	1	1.1
Total	91	100.0

### Small Game and Nongame

The only place in the planning area where ring-tailed cats were collected or identified is in canyon and rock outcrop habitats near Flaming Gorge along the western border of the ACEC. This mammal is listed as "rare" in Wyoming. Another "rare" species of interest is the midget-faded rattlesnake which once occurred along the Green River and tributary canyons during pre-impoundment by Flaming Gorge. Present distribution place it in dry canyons east of the Gorge and along the reservoir.

A 1978 inventory of Red Creek Basin yielded no prairie dog colonies. Within the boundaries of the area are few white-tailed prairie dog colonies, primarily near the Flaming Gorge boundary and on the plateau south of Canyon Creek. Potential for black-footed ferrets within the ACEC is remote. Richardson's ground squirrel are the most common rodent along with Least chipmunk and white-footed deermouse. This area is home to the Northern flying squirrel where conifer and aspen provide an important habitat niche. Other wildlife in the area include red fox, porcupine, bobcat, spotted skunk, white-tailed jackrabbit, cottontail rabbit, weasel, and short-horned lizard.

### White Mountain Petroglyphs ACEC

The White Mountain Petroglyphs ACEC was designated to protect Indian drawings associated with the Fremont culture and the early ancestors of the present Shoshone tribe. Common drawings include elk, feather

head dresses, and human stick figures. The ACEC was officially designated on April 16, 1982 and published in the *Federal Register* on June 30, 1982.

The petroglyphs and immediate area are intensively use by local schools for environmental education field trips. The area below the petroglyph panel, adjacent to the access road, has been degraded by uncontrolled vehicle use. These impacts will begin to reverse themselves if vehicular and foot traffic are channeled by establishing a parking area and access footpath. The surrounding area is also an important deer fawning area and an important raptor nesting area. Scenic viewing of this notable geologic feature and the surrounding area is also a popular use. The White Mountain Petroglyphs have received a moderate amount of vandalism over the years, including bullet holes, modern graffiti, and chalk and crayon marks within the carvings.

### Wild and Scenic Rivers

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90542) to preserve selected rivers in natural, free-flowing conditions. The American Rivers *Outstanding Rivers List* (1988) identified three rivers in the planning area (the Green River, Henry's Fork, and the Sweetwater River) as possessing some outstanding ecological, recreational, natural, cultural, or scenic value.

The Sweetwater River was also listed in the National Park Service's *Nationwide Inventory* (1982) as being potentially eligible for inclusion in the Wild and Scenic River System. The *Wild and Scenic River Study for the Sweetwater River* (1979) found a 9.5-mile segment of the Sweetwater River from Wilson Bar to Spring Creek (outside of the planning area) ineligible for inclusion in the Wild and Scenic Rivers System based on the 25-mile minimum length criteria. The minimum length criteria has since been eliminated for all rivers.

Seven segments of the Sweetwater River in the planning area have been determined to be potentially suitable for inclusion in the Wild and Scenic Rivers System. Outstandingly remarkable values for the segments include historic, scenic, and recreational.

The portion of the Green River administered by the BLM did not meet the suitability criteria based upon the inability of the BLM to manage the area because of lack of jurisdiction. However, it is recommended that a cooperative study between BLM, BOR, and USFWS be conducted to determine eligibility and suitability. Appendix 4-2 lists all rivers and streams examined in the planning area.

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